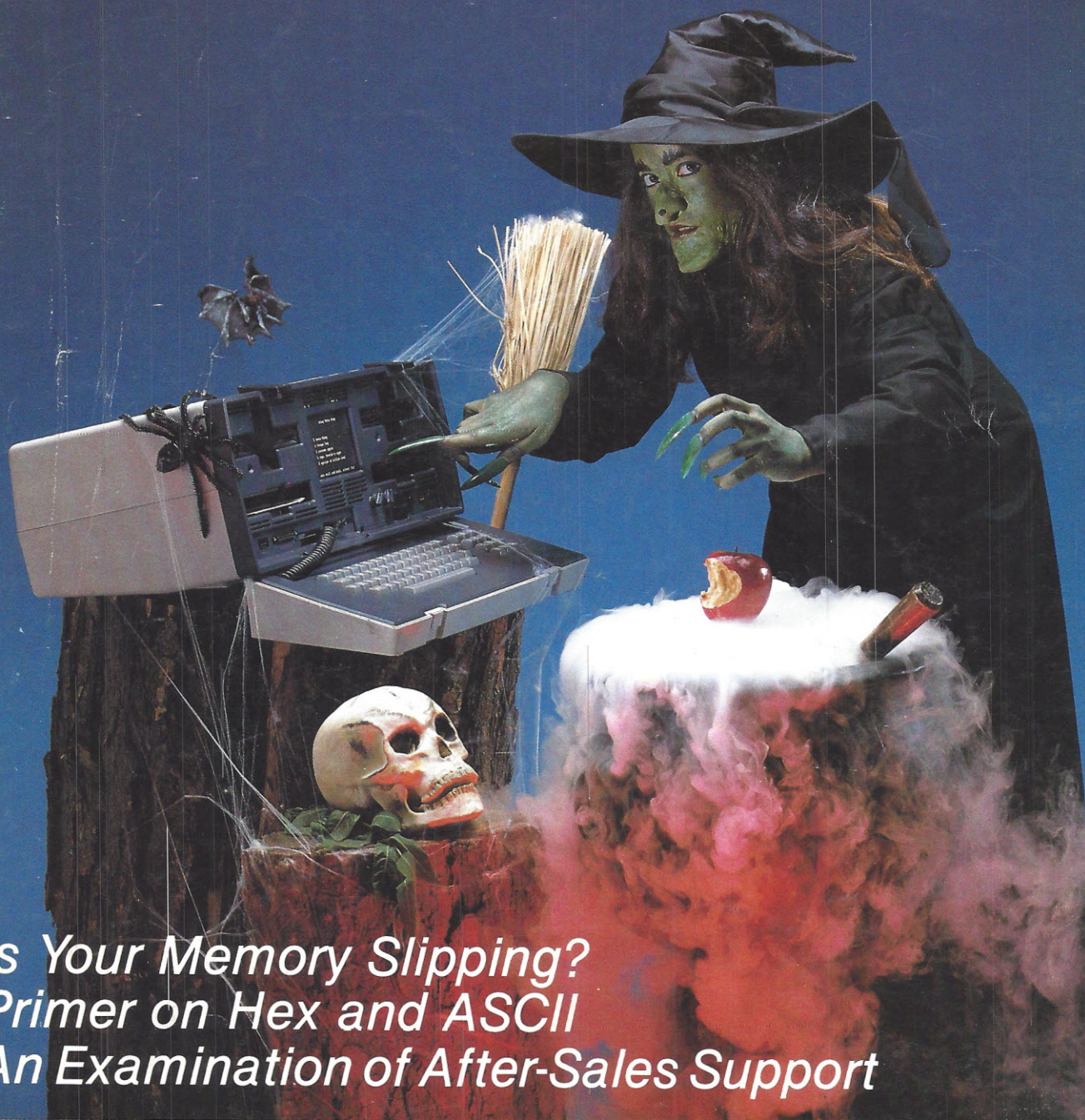


the Portable Companion™

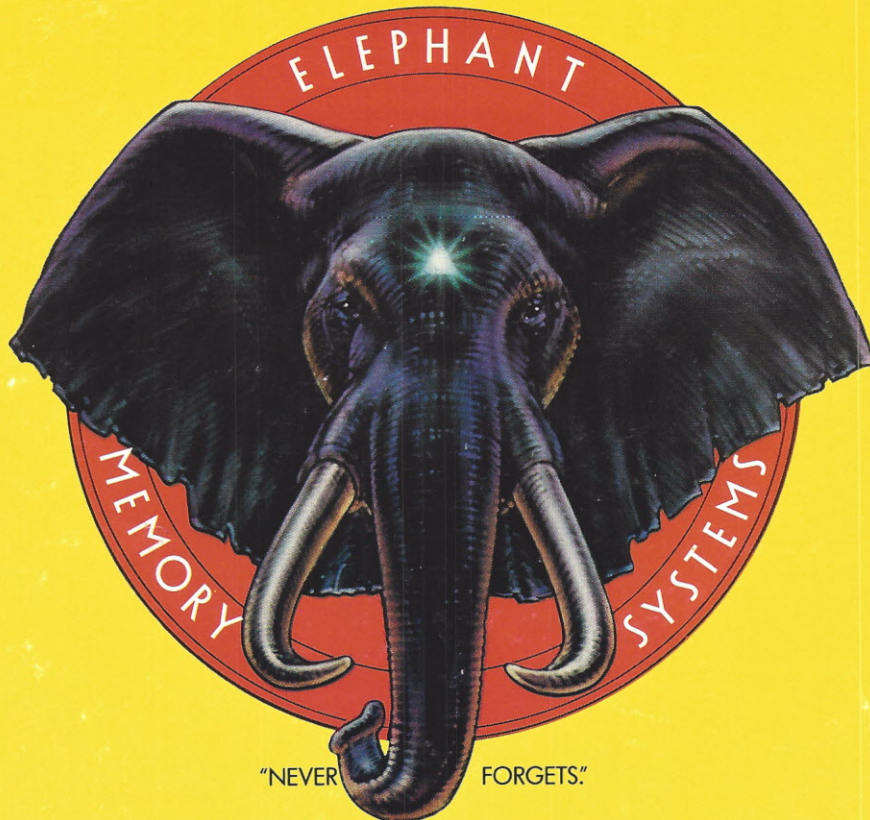
October/November
\$2.95

De-Hexing Your System



*Is Your Memory Slipping?
Primer on Hex and ASCII
An Examination of After-Sales Support*

REMEMBER:



MORE THAN JUST ANOTHER PRETTY FACE.

Says who? Says ANSI.

Specifically, subcommittee X3B8 of the American National Standards Institute (ANSI) says so. The fact is all ElephantTM floppies meet or exceed the specs required to meet or exceed all their standards.

But just who is "subcommittee X3B8" to issue such pronouncements?

They're a group of people representing a large, well-balanced cross section of disciplines—from academia, government agencies, and the computer industry. People from places like IBM, Hewlett-Packard, 3M, Lawrence Livermore Labs, The U.S. Department of Defense, Honeywell and The Association of Computer Programmers and Analysts. In short, it's a bunch of high-caliber nitpickers whose mission, it seems, in order to make better disks for consumers, is also to

make life miserable for everyone in the disk-making business.

How? By gathering together periodically (often, one suspects, under the full moon) to concoct more and more rules to increase the quality of flexible disks. Their most recent rule book runs over 20 single-spaced pages—listing, and insisting upon—hundreds upon hundreds of standards a disk must meet in order to be blessed by ANSI. (And thereby be taken seriously by people who take disks seriously.)

In fact, if you'd like a copy of this formidable document, for free, just let us know and we'll send you one. Because once you know what it takes to make an Elephant for ANSI...

We think you'll want us to make some Elephants for you.

ELEPHANTTM HEAVY DUTY DISKS.

For a free poster-size portrait of our powerful pachyderm, please write us.

Distributed Exclusively by Leading Edge Products, Inc., 225 Turnpike Street, Canton, Massachusetts 02021

Call: toll-free 1-800-343-6833; or in Massachusetts call collect (617) 828-8150. Telex 951-624.

**Now yours
for only \$795.00
including interface* and
Strobe Business Graphics Software!**



The Strobe Graphics System: \$795. You can pay more but you can't buy more.

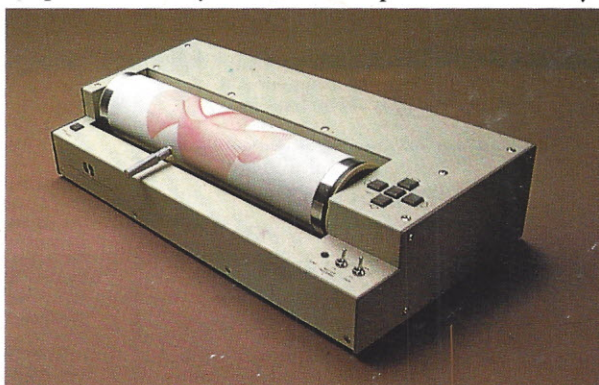
How to chart your company's fortune without spending one. It's a fact. A single chart or graph can tell you instantly what it takes hours to interpret from printouts or other raw data.

Now, with the Strobe 100 Graphics Plotter and Software package, you can create superb hardcopy graphics directly from your computer. And you can do it for a cost of only \$795.00.

The Strobe System transforms complex data into dynamic, colorful visuals with a few simple commands from your computer. Charts and transparencies that once took hours to produce are plotted within minutes. Information can be presented as bar charts, pie charts, curves or isometrics in a variety of colors. And with a resolution of 500 points per inch, the Strobe 100 matches or surpasses the quality of plotters costing thousands of dollars more.

You can also save and modify your graphics through Strobe's menu-driven programs. A broad selection of software is now available.

When the Strobe Graphics System is interfaced to your computer, an 8½ x 11 inch sheet of paper can speak anyone's language—visually. Visit your local dealer and learn how to start charting your fortunes today. Because a perspective on the present can also be your window on the future.



*For Apple, Osborne and Commodore computers.
For serial interface, add \$100.00.

I.R.E.T. INFORMATICA SPA
Via Bovio 5
42100 Reggio Emilia
ITALY
Tel. 52-2-32643
Telex No. 530173

PRESIDENT OFFICE MACHINES
Rea 100 George Street
Hornsby NSW 2077
Australia
Tel. (02) 476 2700
Telex No. 24527

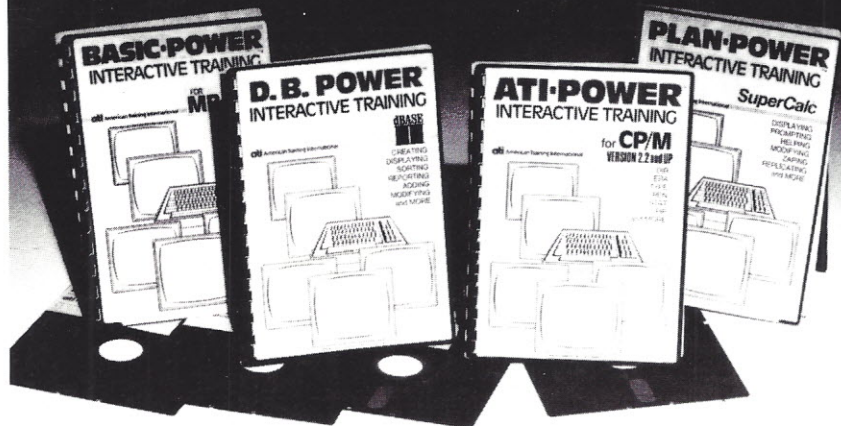
JMM ENTERPRISES
115 Battersby Street
Enumclaw, WA 98022
Tel. (206) 630-1991

DAVID JAMISON CAREYLE
CORPORATION
2049 Century Park East
Los Angeles, CA 90067
Tel. (213) 277-4562

The Strobe Graphics System

Seeing is believing

ATI says they can make life easier . . . so why don't you listen?



Insert our interactive training disc into your Osborne™ microcomputer—and in one hour—you've learned all the essentials of your software program. We guarantee it! Think what that can do for you!

The SOFTWARE TRAINING COMPANY offers an ATI Interactive Training Course for CP/M operating systems, dBASE II, SuperCalc, MBASIC, and many more. ATI's performance-based approach turns your Osborne™ microcomputer into an instructor as it guides you through simple, step-by-step, plain-English lessons. Make your life easier today.

BASIC-POWER for MBASIC

With BASIC-POWER you'll be able to develop business applications programs that actually work. You'll be able to write, enter, debug, and use programs that analyze business expenses or organize mailing lists in little more than an hour! **\$75.00**

PLAN-POWER for SuperCalc

With PLAN-POWER you'll quickly learn to create, modify, manipulate, save, retrieve, label, and print all the financial planning data you need. You'll be amazed at how simply you were able to arrange and calculate complex mathematical data. **\$75.00**

D.B. POWER for dBASE II

With D.B. Power you'll be able to create a data base, enter data, sort data, add, modify, change, and edit important data to generate comprehensive reports—even develop mailing lists—in less than one hour! **\$75.00**

ATI-POWER for CP/M

ATI-Power teaches you 12 of the most common commands in less than one hour! You'll be able to master commands like DIR, REN, TYPE, ERA, PIP, SYSGEN, COPY and more, while learning to prepare, monitor, maintain, even troubleshoot your own system—like a pro! **\$75.00**

SOFTWARE TRAINING COMPANY



Dealer, distributor inquiries referred to: ATI, 3800 Highland Ave., Suite 400
Manhattan Beach, CA 90266, 213-546-4725

ATI MONEY BACK GUARANTEE

If you're not completely satisfied with how fast you can learn by using our ATI Interactive Training Course, simply return it within three days of purchase for a full refund.

- ☐ D.B. POWER for dBASE II ☐ ATI-POWER for CP/M
☐ PLAN-POWER for SuperCalc ☐ BASIC-POWER for MBASIC

Enclosed is \$75.00 plus \$2.50 shipping and handling (CA add 6½%)

Name _____ Date _____

Street _____ City _____ State _____ Zip _____

Mail to: SOFTWARE TRAINING COMPANY
1025 Ocean Ave., Suite 204, Santa Monica, CA 90403

the Portable Companion™

editor/publisher
Thom Hogan

business manager
Ginger Taylor

assistant editor
Jackie Rae

special contributor
Adam Osborne

contributors

Don Adams
Brad Baldwin
Gary Cuevas
Dave Gute
Ken Hirshon

Mike Iannamico
Frank Morton
Jim Tunnell
Kelly Smith

art direction
Roeth/Olson Design Associates

art production
Cynthia Heier
Tirza Kaplan
Ron Walter

advertising/circulation
Deanna D'Zamba

user group liaisons
Frank Morton
Dave Oates

Illustrations by Larry Baumgardner.
Typesetting: Type Plus, Palo Alto, CA.
Cover Design and Direction:

Steve Yamaguma and Associates
Cover Photo by John Spangler
C&I Photography

The Portable Companion is published bimonthly by Osborne Computer Corporation as an aid in helping Osborne 1 owners understand and use their computer.

Send subscriptions, change of address forms, USPS Form 3579, and any other material to The Portable Companion, Osborne Computer Corporation, 26538 Danti Court Hayward, CA 94545. (ISSN 9732-7501). Subscriptions are \$12.50 for six issues. Call for information regarding foreign subscription rates. (415) 887-8080

The entire contents of this issue of The Portable Companion are copyright 1982 by Osborne Computer Corporation. All rights are reserved, and duplication of the contents of this publication in any form or manner without the prior written permission of Osborne Computer Corporation is illegal.

Osborne 1, CalcAids, The Wizard of Osborne, From the Fountainhead, and The Portable Companion are all trademarks of Osborne Computer Corporation. SuperCalc is the trademark of Sorcim. dBASEII is a trademark of Ashton-Tate Inc.

Microsoft, is the registered trademark of MBASIC. WordStar is the registered trademark of MicroPro International. CBASIC and CP/M are the registered trademarks of Digital Research.

Start Up

Ah, yes, another issue for you to peruse.

It's still difficult for me to believe that this is the third issue of a magazine dedicated to a computer that wasn't even being manufactured 14 short months ago (as I write this). Indeed, there is so much to be amazed at here at Osborne central that I often find myself wondering if we really did everything it seems we did during the last year.

For instance: in our first year of existence we produced about 50,000 machines. That number will double in about three months. Or maybe this: in less than six months we became one of the top 20 microcomputer software firms (in terms of gross revenue from sales). Perhaps this statistic might interest you: in slightly over 12 months we've created over 1000 pages of information and documentation for the Osborne 1—that's the equivalent of four full-length novels.

Add to the list a special segment on *60 Minutes*, articles reporting our growth in *Fortune*, *Business Week*, and *Time*, and the *InfoWorld* award as Hardware Product of the Year, and you can see that 1981 and 1982 were busy and exciting times for us. But I don't need to gush these nicities at you—you're probably just as aware of them as we are. No, the point I want to make from all this is that, despite where we've been, we still have lots of hard work to do if we are to achieve our goal of making the best possible computer products at the lowest possible cost to you, the users.

We're entering into what I like to call the buckle-down mode. We've proven that we can get good, dependable products out the door; we've proven that we can write about them; we've started a magazine to help support our product. But none of that is worth much if we stop now.

In the coming months you're going to hear a lot more about Osborne and the computers we make. The options you've been waiting for will start to appear in fast order; software for the machine will become more plentiful and just plain better; and the magazine will bring you even more information.

And we're listening. Those reader surveys that so many of you filled out and returned to us have valuable information that will help us respond to your needs. We didn't know that so many of you had Epson printers (over 50 percent of Osborne owners) and we certainly didn't expect so many requests for FORTRAN and Pascal, or else we would have had our versions of them ready by now. Needless to say, what you tell us you want is important. and you'll be seeing more of your requests fulfilled in the coming months.

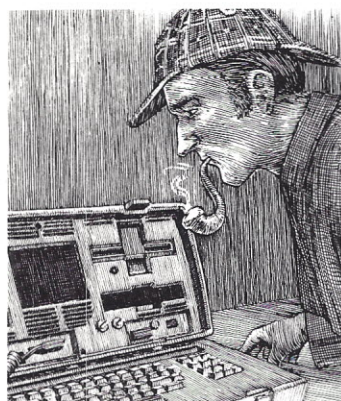
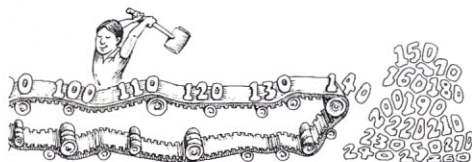
My message to you, dear reader, is that we're extremely proud of what we've managed to accomplish in so short a time. But we wouldn't be where we are today without you. We certainly won't forget you, but I do want to make sure that you hear us when we say that we *want* your input. Perhaps I shouldn't be saying this—I received SEVERAL HUNDRED letters to the editor within 14 days after the first issue was mailed—but we enjoy hearing from you.

So, drop us a note from time to time and tell us how we're doing. If we do something very right or very wrong, don't hesitate to congratulate or damn us. The company whose product you use is a very conscientious one, and we're going to keep it that way.

Thom Hogan
Publisher



In this and future issues we hope to aid you in "de-hexing" your computer through a potpourri of tips and information designed to take the mystery out of computing.

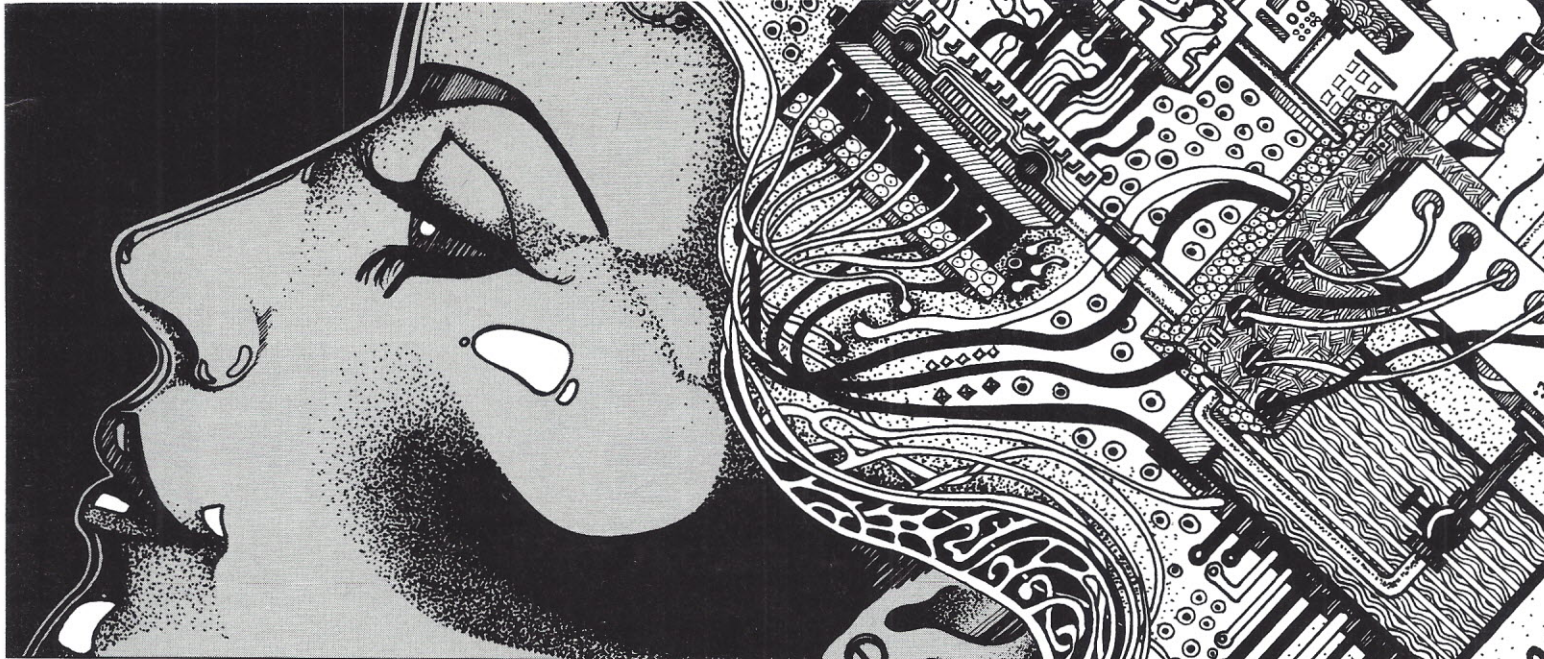


FEATURES

- 41 AUTOMATIC LINE NUMBERING** Intermediate
How to let the Osborne 1 handle the numbers while you deal in concepts.
- 44 I/O, I/O, IT'S OFF TO WORK WE GO...** Intermediate
A look at serial communications and the popular letter-quality Diablo 630.
- 48 WHERE DID ALL THE MEMORY GO?** Novice
The mysteries of storage files...
"It's not at all elementary, my dear Watson."
- 51 TWO-AND-A-HALF UTILITIES FOR dBASE II** Intermediate
- 52 RANDOM TRACKS**
- 56 CONNECTING THE DIABLO 630 PRINTER** Intermediate
- 58 A PRIMER ON HEX AND ASCII** Novice
"Double, double toil and trouble"

DEPARTMENTS

- 3 START UP
- 7 FROM THE FOUNTAINHEAD™
- 10 LETTERS
- 15 WIZARD OF OSBORNE™
- 20 FOG USERS' GROUP
- 52 INSIDE/OUTSIDE OSBORNE
- 57 CALCAIDS™
- 70 THE PROCESSED WORD
- 79 NEW PRODUCTS
- 93 PUZZLER
- 94 WHOOPS!
- 96 SOURCES



THINK DIGITAL MARKETING

Digital Marketing will keep you ahead in the 80's by helping you build a professional software library of business organizational tools for your Osborne Computer.

FIELD COMPANION™: Traveling Sales and Professional Record-Keeping Program — Track time spent with clients. Maintain your appointment calendar, customer lists, names and addresses, and even an expense journal for budgeting and tax purposes. Includes a powerful invoicing feature as well as an inventory stock list and much more. Price is \$295. Manual alone — \$30.

FILEFIX™: Disk Directory utility — The easiest and best way to recover erased files. Undeletes erased filenames, renames multiple files using wildcards. Also includes programs to encrypt files, show textfiles on screen, dump .COM files in hex and ASCII, CPU verification, disk block allocation map, verify copied files and more! Price is \$100.

SYNOPSIS™: Central File Index — Maintains an index on your disk with filenames, disk ID and four user-defined lines of comments about each file. You can search the index for key words or phrases in one or more fields. Price is \$125.

PROOFREADER™: Spelling Checker — All the features you need for checking your documents for spelling errors and typos. Uses 20,000 word dictionary to check even your largest documents — 20 pages or more — in under five minutes! Words can easily be added to dictionary. Price is \$125.

CARDFILE™: Electronic File Box — Stores, retrieves, and displays information that is typically kept in index card files — summaries of articles, notes, memos, catalogs of books, records, tapes, etc Data is entered through your own word processor. Price is \$89.

FOR MORE INFORMATION, SEE YOUR DEALER, OR CALL US DIRECT.

SOFTWARE
SOFTWARE
DIGITAL MARKETING
DIGITAL MARKETING™
2670 CHERRY LANE • WALNUT CREEK • CALIFORNIA • 94596
(415) 938-2880 • Telex 17-1852 (DIGMKTG WNCK)

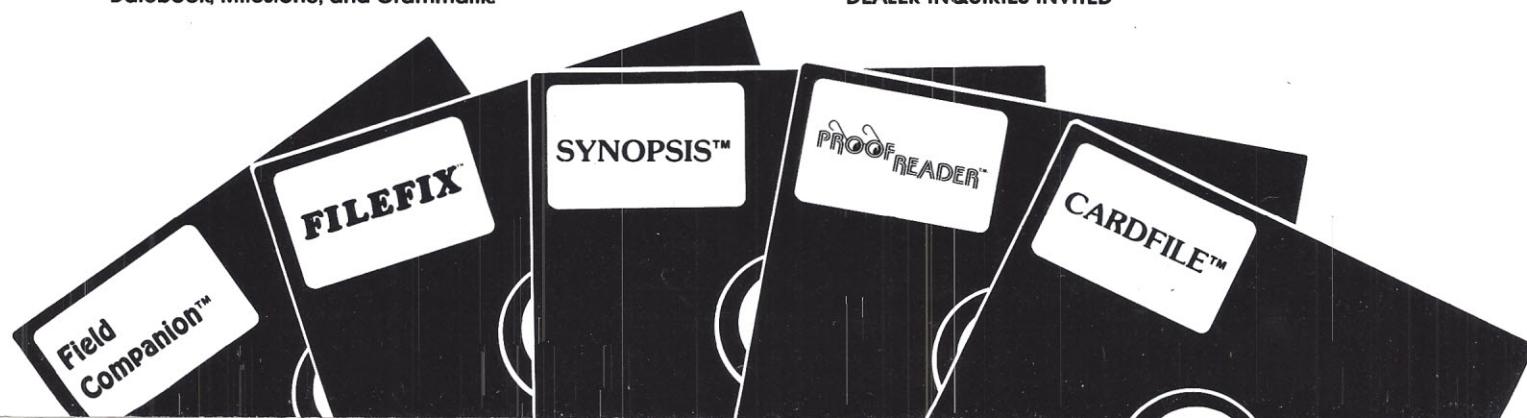
THINK AHEAD

Digital Marketing's state of the art software is chosen to keep you ahead of the technology by offering the most innovative and proven programs available. Also available from Osborne or your Osborne dealer: Footnote, Personal Datebook, Milestone, and Grammatik.

All programs require CP/M.

Trademarks: CP/M - Digital Research. Footnote, Cardfile, Synopsis - Pro/Tem Software. Personal Datebook, Milestone - Organic Software. Proofreader, Grammatik - Aspen Software.

DEALER INQUIRIES INVITED





The \$1795. Personal Business Computer that is changing the way people go to work.

Henry Ford revolutionized personal transportation.

Adam Osborne has done the same for personal business computing.

Virtually everything you need in a personal business computer to work faster and better with words, numbers, and ideas is included in a portable carrying case you can take anywhere.

The Osborne is easy to learn, fun to use, and quickly becomes indispensable.

One price, \$1795, buys it *all*.

The Osborne is available from a computer retailer near you.

And you can buy it in any color you want. As long as it is blue.

Put away your buggywhips.



For your nearest dealer,
call (in California) 800 772-3545
ext. 905; (outside California) call
800 227-1617
ext. 905.

OSBORNE
COMPUTER CORPORATION™

The \$1795 suggested retail price for the Osborne 1 (a trademark of Osborne Computer Corporation) includes a full business keyboard, built-in CRT display, two built-in floppy disk drives, CPU and 64 kilobytes of RAM memory, RS-232 and IEEE 488 interfaces, and the following software packages: WORDSTAR® word processing with MAILMERGE® (a registered trademark of MicroPro International Corporation of San Rafael, California); SUPERCALC® electronic spreadsheet system (a trademark of Sorcim Corporation); CBASIC® (a registered trademark of Compiler Systems); MBASIC® (a registered trademark of Microsoft); and CP/M® (a registered trademark of Digital Research).

from the
FountainheadTM

from the
Fountainhead

from the
Fountainhead

from the
Fountainhead

from the
Fountainhead

from the
Fountainhead

from the
Fountainhead

from the
Fountainhead

Trademark of Osborne Computer Corporation

Is There Support After The Sale?

by Adam Osborne

What level of after sales support should you expect of the dealer who sold you your microcomputer?

In order to grow, the microcomputer industry has had to attract a customer base who know nothing about computers—and would like to keep it that way. They buy a microcomputer because it is one of those conveniences of the modern electronic age, along with video recorders and electric typewriters. They buy a microcomputer to do word processing, or financial calculations, or whatever. And if our industry is to continue growing then we must learn how to accommodate this emerging, technically unsophisticated customer base.

Customers should be able to get all of their questions answered, needs attended to, and additional services supplied without ever having to talk directly with the manufacturer. Would you expect to call the Sony factory if your video recorder started displaying streaky images? Of course not.

Yet, all too frequently, the manufacturer is the first person you think of calling when your microcomputer starts acting up.

Why?

First let us look at dealer support from the dealer's viewpoint.

Competent microcomputer dealers know that providing excellent after-

sales support is very good for business. Well-supported customers are repeat customers; and they provide referrals. Moreover, after-sales support can be very profitable. Customers rarely mind paying for value. But there are three problems facing the microcomputer dealer:

1. Different types of microcomputers require totally different levels of support.
2. Customers rarely understand that the microcomputer dealer is in business to make a profit, which means that support must be paid for.
3. The best-intentioned dealer can rarely find enough competent personnel to provide the level of support to which they might aspire.

First, consider how the type of support a dealer must give depends on the nature of the microcomputer systems sold.

At one extreme there are the "hobbyist" microcomputers which can be sold board by board. Dealers must be prepared to provide a great deal of very technical support when selling this type of product. But the customer buying a "hobby" microcomputer is usually pretty sophisticated.

At the other end of the spectrum you get the totally unsophisticated customer buying an Osborne 1 to use as a word processor, or with Super-

Calc. This customer will likely never write a program, and could care less what is inside the computer, so long as it keeps working. This customer, in theory, requires far less support; but then, the customer is likely to be very unsophisticated.

No dealer can hope to handle properly both ends of this spectrum. The dealer must choose the types of product he wishes to sell, then he must gear up to support the products of his choice.

The next step is to make sure that the customer understands very clearly, and up front, what comes free and what they will be charged for.

The wise dealer will routinely offer the type of assistance that customers routinely demand. This should in-

clude short courses describing WordStar and SuperCalc for all Osborne 1 customers.

Very few people go out to buy a microcomputer. They usually want to buy a solution to a problem.

How much of this does the customer pay for, and how much does the customer get free? Providing charges are reasonable, customers usually do not mind paying for assistance. They object to paying and getting nothing for their money.

Now let us look at after-sales support from the customer's viewpoint.

Very few people go out to buy a microcomputer. They usually want to buy a solution to a problem. They want to do word processing instead of typing, or get more financial calculations done, or whatever.

The bottom line is that the customer bought the microcomputer for a specific purpose, and unless the customer can use the microcomputer to achieve that purpose, the money they spent might have well been poured down a rat hole.

Dealers and manufacturers may complain about the silly questions they are frequently asked by naive customers, but pragmatic people know that these questions will come, and if we, the manufacturers and dealers want to stay in business, then we had better be prepared to handle naive customers. That being the case the customer should be able to ask questions, however naive, without

having to apologize for asking.

Customers will usually turn first to the dealer because the dealer is local, whereas the manufacturer may well be half a continent away. If the dealer cannot help, then the customer turns to the manufacturer.

It is just that simple.

It would be naive to assume that customers will ever change.

People are people. If we want to sell more microcomputers to people then we must be prepared to cope with people's needs. That is the end of that.

It would be equally naive to assume that dealers and manufacturers currently provide adequate after-sales support.

But that will change.

Those who do not provide adequate after-sales support will not remain in business much longer.

What are the solutions?

For the store, the solution will come with time as more well trained store personnel graduate from our infant industry.

The challenge facing manufacturers is to provide better educational materials.

Computers do not become simpler just because they become less expensive. As computers become cheaper, stores cannot be expected to handle the same educational load out of a shrinking absolute dollar profit. Manufacturers must learn how to create educational materials that allow customers to teach themselves how to use a newly purchased microcomputer. These educational materials must teach quickly and painlessly. The customer will not walk away from two hours of self-instruction knowing everything there is to know about the microcomputer. But the customer should be able to make it play.

The challenge for the next two years is not how to build cheaper or better hardware; the challenge is to create better user training material.



Dr. Adam Osborne at the West Coast Computer Fair press conference in March.

PLAY THE SYSTEM THAT MADE KEN USTON THE WORLD'S WINNINGEST BLACKJACK PLAYER.

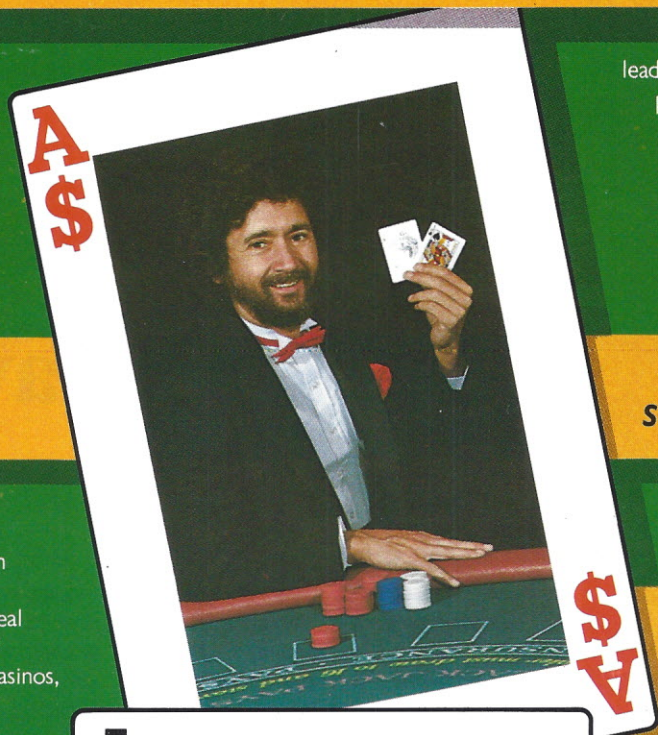
Ken Uston, familiar to millions as the blackjack expert featured on CBS's "60 Minutes," has won a reputation as the world's foremost blackjack player. Now Intelligent Statements brings Ken Uston's casino-proven blackjack system to your home computer.

PLAYS LIKE THE REAL THING

Ken Uston's Professional Blackjack™ is the most complete and realistic blackjack game you can buy. You'll meet the same playing opportunities that you'd face at a real blackjack table — at your choice of over 70 Nevada and Atlantic City casinos, each with its own set of rules and variations. Or you can create your own casino, manipulating sixteen different game parameters to produce 39,813,120 different playing environments. You can select the number of decks in the shoe, vary the dealing speed, choose and name competing players, set their wallet sizes and much more. And all your data is accurately displayed, so you can play the strategy you like and get the feedback you need **to win**.

WINS LIKE THE REAL THING

Ken Uston's Professional Blackjack is the most thorough and authoritative teaching system you can buy. Now you can learn all of Ken Uston's computer-optimized card-counting strategies, from basic to advanced levels. Menu-driven interactive practice drills — augmented by superb documentation —



lead you through each skill level. At any point you can choose to see accurate running counts, continuous statistical evaluations, discard deck totals and instructional prompts, complete with sound effects. So you develop and refine the skills you need **to win big**.

DON'T LOSE OUT. START WINNING NOW.

Start winning at blackjack. Send \$89.95 (plus \$2.00 for shipping and handling) to:

Ken Uston's Professional Blackjack
Dept. 0B10
Intelligent Statements, Inc.
Box 600, Holmes, PA 19043.

(North Carolina residents add 4% sales tax).

Make checks payable to Intelligent Statements, Inc. Major credit cards accepted over 24-hour toll-free lines at **1-800-345-8112** (PA residents call 1-800-662-2444). Be sure to specify your home computer brand.

IBM PC* requirements:
48K RAM, disk drive, PC DOS,* 80-character display. Color and monochrome versions supplied with each package.

APPLE II requirements:**
DOS 3.3, 48K RAM, disk drive, 40-character display.

Osborne 1™ requirements:
Standard Osborne 1 package.

Display shows actual photograph of IBM PC version. Apple color graphics and Osborne monochrome graphics are similar.

Versions for Atari** TRS-80** and other brands will be available shortly.

intelligent statements™

GROWN-UP GAMEWARE™

©copyright 1982 by Intelligent Statements, Inc. All rights reserved.

*IBM PC and PC DOS are trademarks of IBM. **Apple, Osborne, Atari and TRS-80 are trademarks of Apple Computer Inc., Osborne Computer Corp., Atari Inc., and Tandy Corp., respectively.

Letters
Letters
Letters
Letters
Letters
Letters
Letters
Letters
Letters
Letters

The Ayes Have It

Perfectly Pleased

Because one of the people mentioned in the first issue of Osborne's *The Portable Companion* questioned the expertise of dealers, I feel a need to respond from my own experience.

I can sincerely say that, especially when it comes to service, I have never purchased a major product which has had better service support. And in a day when many are quick to sell you things, but slow to stand behind them when things go wrong, that's very important.

In particular I have found the Santa Ana regional service center, and Bob who heads it up, to be totally supportive and helpful in keeping my Osborne running smoothly. Consequently, from the standpoint of after-sale support alone, I have been recommending the Osborne computer to others.

Ron Whittaker
Director of Broadcasting
Pepperdine University

Wants WordStar Patches

The premiere issue of your magazine was very informative. Nearly every square inch of it was useful—even the advertisements.

Since you are soliciting reader comments, I have a request to make: please publish the patch mnemonics for *all* of the WordStar patch table. The mnemonics for the printer controls (e.g., BLDSTR and PALT) appear in the reference guide, but many

others would also be useful. For instance, how do I set the default margin to 52 instead of 65? How do I set the default line spacing to 2 instead of 1? I am sure these patches are easy to make, but I'm helpless without the right information.

David Price
Midlothian, VA

We'll be following up on Mr. Price's request in the near future. One thing that's holding us up right now is that we want to publish the patches to both the current version (2.26) and the updated version (3.0) we are about to release. —th

Some Random Comments

I was very happy to receive the first issue of *The Portable Companion*. It was a tremendous public relations step.

The article on WordStar patching was especially timely for me as I had just become aware (through the users' group) of some of the things that can be done.

The most valuable function that your magazine can perform, in my opinion, is software evaluation and reporting on what various programs configured for the Osborne can do. I would also like to see update information and corrections to the User's Guide. Nearly all microcomputer documentation is very poor, and, while the User's Guide is better than many, there is still room for improve-

ment. I am sending some suggestions for this. I especially applaud your intent to provide ongoing CalcAids.

If you can keep the quality of the magazine up (and I believe the bimonthly publication schedule is very wise) you will multiply the value of my Osborne 1 manifold.

Ralph Bashor
Lakewood, CO

Mr. Bashor presents a number of comments that deserve some return comment. Since Osborne publishes the magazine, and since Osborne also publishes software, it seems unnatural to us to review software within the magazine. Nevertheless, we hope that the User Group section, which is not written or edited by Osborne personnel, will eventually feature product reviews. All software sent to us for evaluation is being routed to the User Group Liaison. We will, however, be putting together some "comparison" articles, ones which describe the features of a number of related products.

On the subject of documentation, we couldn't agree more. It is our intention to eventually make The Portable Companion a monthly publication, but we'll need your help (and subscription!) to do so. So, keep those cards and letters coming; those of you out there brave enough to write an article shouldn't hesitate to do so—we're looking for information to print for all levels and abilities.

Grafrax Sub- and Superscripts

Your magazine came out at a very good time for me; right when I got my Osborne. I was especially pleased to find the article by Jim Woolley about modifying WordStar for the Epson printer. To make a long story short, it didn't work very well on my printer with Grafrax Plus. This worked out OK because it forced me to learn what I was doing rather than just follow the recipe. I made the following changes in my copy to suit

my needs in my job. I still have a few problems with it in terms of turning off the double strike after using a superscript. If I used control code 48H instead of 54H it messes things up. Got any suggestions? Thanx.

The Epson printers with Grafrax Plus don't need to use the PSCRLF or PSHALF for sub- and superscripting. I installed sub- and superscripting as follows, using the instructions already there in WordStar:

```
Superscript ON (^PT)
ROLUP:                =03
ROLUP: +1              =1B
ROLUP: +2              =53
ROLUP: +3              =00
```

```
Subscript ON (^PV)
ROLDOW:               =03
ROLDOW +1             =1B
ROLDOW: +2            =53
ROLDOW: +3            =01
```

```
Sub- and Superscript
OFF
(^PA)
PALT:                  =02
PALT: +1               =1B
PALT: +2               =48
```

No Name Given

My Epson manual does not show 54H turning the Sub- and superscript modes OFF. Instead, 5EH is listed as turning OFF these modes and unidirectional printing—th

How About Us?

I have enjoyed my Osborne for months and now look forward to your new publication. There is a section missing though—a really user friendly down-to-basics column for timid beginners (my plateau)! I know there are many of us—I was slow and steady on a microwave and cuisinart, too. So, develop a column with simple programs, imaginative computer uses and a gentle touch.

Lynn Blakely
Honolulu, Hawaii

Unfair Comparison Repaired

I think Jim Wooley's article

"WordStar with Epson" in the first issue of the magazine was somewhat informative; however, I thought it was biased because there was no comparison between our Pretty Print package and his patch recipe. It is obvious that Jim discredited our product because we have the only commercially available package that we know of, to date, that sold for \$85.

I feel that Jim was portrayed as a "Good Guy" because he gave part of a greatly needed solution to Osborne owners of an EPSON dot matrix printer. On the other hand, although our name was not mentioned in the article (but our city was), we were portrayed as the "Bad Guys" because we charge for a complete solution for most dot matrix printers.

continued on page 92

CABLES!!!

IEEE-488 TO CENTRONICS

OSBORNE® -EPSON®
PARALLEL, ETC.
6'-\$29.95/12'-\$36.95/18'-\$42.95

RS-232 CABLE FOR MODEM, ETC. SHIELDED CABLE WIRED FOR DCE

6'-\$24.95/12'-\$29.95/18'-\$35.95

KEYBOARD EXTENSION CABLE PLUGS IN-BETWEEN KEYBOARD AND COMPUTER (REMOVABLE)

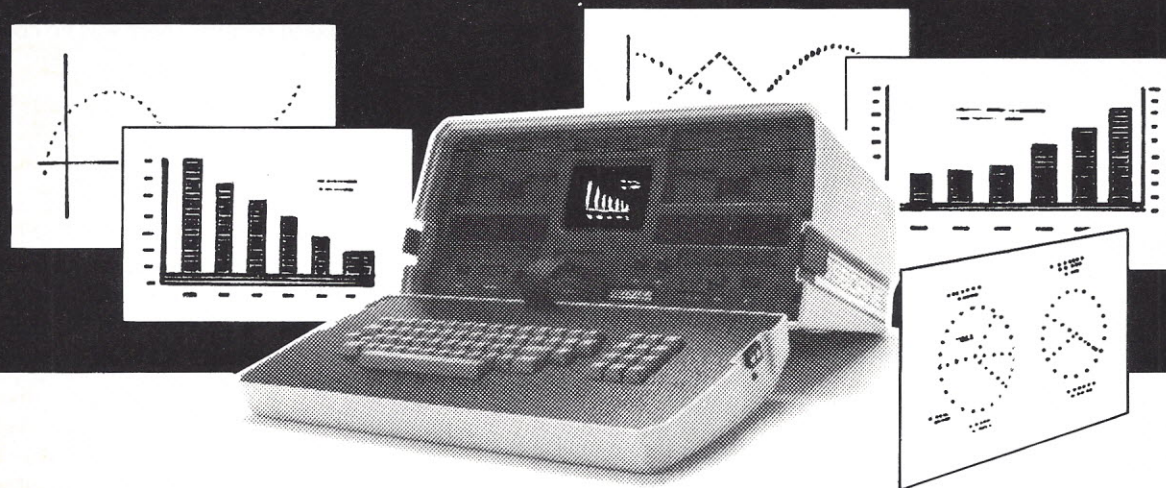
6'-\$24.95/12'-\$31.95

All cables are commercial quality with added strain relief & insulation. Buy factory-direct from us and save! All items are in stock, we ship via First Class Mail twice daily. Send amount plus \$2.00 p/h per cable to:

WEST MICHIGAN CONNECTION CO.
P.O. BOX 129
COMSTOCK PARK, MI 49321
(616) 452-3969

Now Available
At Last!!!

Introducing **GRAFIKS**



Low Cost Professional Graphics for only \$125.00

Now it's easy to create professional bar charts, line graphs, scatterplots and pie charts on your screen or printer. Custom designed for the Osborne 1, GRAFIKS pulls your standard software together and brings it alive. Create a graph in only minutes with our user-friendly menus. Generate graphic data with your own CBASIC programs and let GRAFIKS produce instant graphic output. We even supply sample CBASIC programs. Or, tell GRAFIKS to read a portion of your SUPERCALC files and transform these numbers into pictures. Once you've created and proofed your graph on the CRT, print it. We support over ten popular printers, including Epson, Okidata, MPI, Seikeshi, and others. Finally, store your graphs on disk for later use or update. When your work is finished, play with the Osborne. We give you easy access to all 32 Osborne graphic characters. So have fun!

THE ONLY TOTAL GRAPHICS PACKAGE WHICH OFFERS:

- Bar graphs, pie charts, point plots, free form labeling, superimposed graphics, autoscaling.
- Capability of supporting all popular dot matrix printers.
- The ability to interactively create and edit graphics on the CRT.
- Compatibility with standard Osborne software — SUPERCALC files and CBASIC programs.
- Low cost, professional graphics on both the CRT and your printer.
- User-friendly menus.

Acquire GRAFIKS from your local dealer or contact us directly. Specify single or double density.

California residents add 6½% tax.

ROBONICS

901 Manhattan Ave.
Hermosa Beach, CA 90254
(213) 376-1750

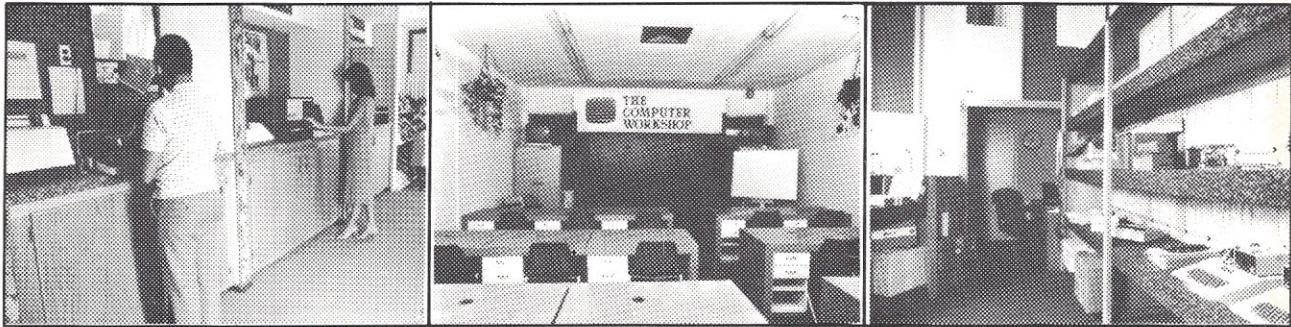


Osborne 1 is a registered trademark of Osborne Computer Corporation;
CBASIC is a registered trademark of Compiler Systems;
SUPERCALC is a registered trademark of Sorcim Corporation.

Computers Make Sense at The Computer WorkshopSM

The Computer WorkshopSM consists of four separate centers, each dealing in a distinct area of computer products and/or services.

We do this, so that we can provide you with the **full support** that computer users of today have come to expect.



RETAIL CENTER

1776 Plaza — Store No 110
Rockville, Maryland 20852
(301) 468-0455

A full service computer store prepared to help you select your small computer system, peripherals and software. (Along with others, we offer the Osborne I computer.)

SYSTEMS CENTER

1776 Plaza — Store No 107A
Rockville, Maryland 20852
(301) 468-2399

A systems house prepared to design, integrate, install and maintain to your requirements. (This center is available should you need help with special applications for your Osborne I.)

EDUCATION CENTER

1776 Plaza — Store No 108
Rockville, Maryland 20852
(301) 468-2399

Education in the use and handling of small computer systems and software. There are regularly scheduled classes on a wide variety of computer related subjects. (Here, learn how to use your Osborne I and its software.)

SERVICE CENTER

1776 Plaza — Store No 107B
Rockville, Maryland 20852
(301) 468-0901

A service store prepared to repair your small computers and peripherals. (We can perform authorized **warranty** service on your Osborne I too!)

Osborne I is a Trademark of Osborne Computer Corporation

What Other Dealer Can Offer You More?

We, at The Computer WorkshopSM, want to go over and above. We want to help you make sense of it **ALL!**

Watch for the opening of our new store in Annapolis!

1776 Plaza
1776 East Jefferson Street
Rockville, Maryland 20852
(301) 468-0455



THE
COMPUTER
WORKSHOPSM

**A Collection of Specialty Computer Stores
For Metropolitan Washington, D.C.**

DATABANK

DATA MANAGEMENT FOR AMATEURS



Even "Drac" has trouble convincing people he's an amateur when they see the results he gets on his Osborne 1 with DataBank!

DataBank software and the Osborne 1 system are a powerful combination for creating information management and records processing systems the way you want them.

And, you can do it yourself...even if you've never touched a computer before! There's no cryptic "computerese" to learn with DataBank...it speaks plain language.

Ease of use doesn't limit DataBank's power or performance. All the functions you'll need are packaged in one unified software system: on-line data entry, up to 50 data fields per record, high speed sorting by up to ten (10!) data fields, 10 levels of record selection on all output (reports, letter merges, etc.), reports with arithmetic, query, letter merge, mailing labels, formatted disk file output, and utilities to define your own files, screen formats, menus and reports.

DataBank provides a direct, documented interface with your Osborne's WordStar® Program for letter merges. And, you have a choice: let DataBank read and merge your document; or output a formatted file to disk to use with MailMerge®.

Tight on disk space? There's no need to reserve work areas with DataBank. Assembly language sorts are done in place to optimize available disk storage. Files can span disks too! Up to four drives, including Winchester, can be used for a single DataBank file. That can mean over 10,000 names per

MegaByte on a mailing list!

Want to get into customization? DataBank includes a powerful, well documented MBASIC Subroutine Library for your specialized requirements. It's supplied on the disk in source code so you can see how DataBank works. Using the library, even an amateur BASIC 'grammer can look like a pro in no time.

Documentation? The best...rated excellent by InfoWorld. Over 150 well written pages will "hold your hand" while you put DataBank to work.

Eight sample information systems are included: a mailing list, inventory, correspondence system, word processing log, client/vendor file, real estate listings, student file, bank loan records. With these, DataBank is up and running the day you get it!

DataBank costs \$249. And, it gives you more than other software that costs lots more. Delivery is off the shelf, so get it for your system today. Contact your Osborne Dealer or Data Access Corporation.

DataBank, the data management system for amateurs.

DATAACCESS®
CORPORATION

4221 Ponce De Leon Boulevard
Coral Gables, Florida 33146
(305) 446-0669

*Wordstar and Mailmerge are trademarks of MicroPro International

the Wizard
of Osborne™

the Wizard
of Osborne

the Wizard
of Osborne

the Wizard
of Osborne

the Wizard
of Osborne

the Wizard
of Osborne

the Wizard
of Osborne

the Wizard
of Osborne

the Wizard
of Osborne

the Wizard
of Osborne

Trademark of Osborne Computer Corporation

Once More Into the Fray . . .

by Thom Hogan

The Wizard felt so sorry for the postman here in Hayward this month that he went out and bought the poor fellow a new pickup truck to carry all the questions you readers are sending. Now, if I could only figure out how to type responses on five computers at once . . .

Q: I've been trying to use MailMerge, but every time I use the FI dot command I get files that don't start at the left margin. Other times I get a blank page inserted between two perfectly typed pages. What am I doing wrong?

A: It's hidden spaces and carriage returns that are probably causing most of your problem; in addition, you probably have a PA dot command at the end of one of your files.

MailMerge doesn't like extra information in a file, not even a single space or line. You should edit all your files and make sure that no extra spaces are lingering at the end of any lines, that no blank lines (that you don't otherwise want) are included, and that you DO NOT end the file with a page break (.PA). In fact, most files shouldn't be ended with even a carriage return; just leave the cursor one character to the right of the last character typed on your page.

If you're confused about how to use MailMerge, see Mike Iannamico's

The Processed Word column in this issue of *The Portable Companion*; he'll show you one way to use this handy program.

Q: I just bought a Smith Corona TP1, but can't figure out how to connect it to my Osborne 1. I thought I could just buy a standard Centronics parallel cable, but that doesn't seem to be the case.

A: True, Smith Corona did do some unusual things with their parallel interface and this results in a non-standard cable having to be created.

Normally ground would be found on pins 19, 20, 21, 29, or 30 on the printer; each of these ground lines would be connected to provide "cleaner" (less noisy) signals to the printer. On the TP1, some of the aforementioned pins are not connected to anything, meaning they can't be used. We recommend the following cable configuration:

Osborne 1		TP1
pin 1	DATA 1	pin 2
2	DATA 5	6
3	DATA 2	3
4	DATA 6	7
5	DATA 3	4
6	DATA 7	8
7	DATA 4	5
8	DATA 8	9
11	STROBE	1

12	GROUND	16
15	BUSY	11
16	GROUND	17
19	SELECT	13

The cable should be kept to a length not exceeding eight feet.

Because the TP1 always inserts a line feed character when it receives a carriage return, you must install the printer with WordStar's INSTALL program as a "Teletype-Like Printer With Backspacing Capabilities." This will assure you can implement Boldface, Underlining, and other multistrike commands. Use the Osborne SETUP program to change the protocol to "Centronics."

Q: What is a null modem cable, and what do I use it for?

A: You'll want to check out Brad Baldwin's article "I/O, I/O, Its Off To Work We Go" on interfacing the RS-232 port, elsewhere in this issue. But, to answer your question, a null modem cable is one which exchanges the data transmit and receive lines between two devices. A normal, minimal serial cable for the Osborne 1 looks like this:

Osborne 1		RS-232 device
pin 1	GROUND	pin 1
2	TXDATA	2
3	RXDATA	3
7	GROUND	7

A null modem cable changes this to:

Osborne 1		RS-232 device
pin 1	GROUND	pin 1
2	TXDATA	3

3	RXDATA	2
7	GROUND	7

Almost every modem you might connect to the Osborne requires such a null modem cable. Many printers, however, require the standard serial cable, which we described first. If you're having problems deciding which cable you need, consult with your dealer.

Q: I have need to enter protected code words into a program (words that are typed in, but cannot be seen by the user). How do I do this in BASIC?

A: This routine is simple to create using MBASIC. The secret is the use of the INKEY\$ or INPUT\$ () statements. INKEY\$ allows you to put the value of what the user types into a string for later processing. Unfortunately, if the user hasn't pressed a key when INKEY\$ is processed, no value is placed into the string. Therefore, you must always use INKEY\$ in a statement like this:

```
1000 ANSWER$ = INKEY$: IF
LEN(ANSWER$) = 0 THEN 1000
To wait for a user to type a password
using INKEY$, you'd have to code
something akin to this:
1000 RESPONSE$ = " "
1010 RESPONSE$ = INKEY$: IF
LEN (RESPONSE$) = 0 THEN 1010
1020 IF
LEFT$(RESPONSE$(1,1)) = 13
THEN END:'USER TYPED
RETURN
1030 ANSWER$ = ANSWER$ +
RESPONSE$
1040 GOTO 1000
```

If you have a predetermined length of input you want a user to enter, but not see on the screen, you can use the INPUT\$ () statement. Within the parentheses you enter the number of characters the statement is to wait for. Thus, the above routine simplifies to this:

```
1000 ANSWER$ = INKEY$
(NUMBER%)
```

where NUMBER% is the number of characters the user is to type. One

THE ORGANIZERS



COMPUTER STAND

- Keeps desk clear for you and your work
- Keeps the screen elevated for reduced glare and less eyestrain
- Your system disks and user manuals are kept within easy reach on a handy built-in shelf
- Area is available under the shelf for computer related supplies—Out of the way, out of harm, and out of sight!
- The best computer organizer made is yours for . . .

\$29.50

PRINTER STAND

- Allows a full four inches of paper to be stored under the printer
- Built-in shelf provides space for manuals
- Sturdy and rugged, the finest printer stand available is only . . .

\$27.50

Durable high impact, textured plastic organizers are available in Glacier White or Basic Black. Please specify color.

APOGEE DESIGNS LTD.

Send check or money order to: Apogee Designs, Ltd., 3100 Fallscliff Rd., Baltimore, MD 21211, Phone (301) 235-7523. MasterCard and Visa accepted. Add \$2.00 for freight per unit to anywhere in the Continental U.S. 5% sales tax for Md. residents.

Which would you rather speak?

A > PIP A: = B: ACCNT 1. DAT [V]

Your computer's language.

CP PLUS DISK FILE COPY

This facility allows copying of files
from one disk to another.

YOUR CURRENT DISK IS DRIVE A. DRIVE TO COPY TO? B
FILENAME OF FILE TO BE COPIED? ACCNT 1. DAT

Or your own.

Hello CP+. Goodby CP/M® techno-jargon.

It's time you had a talk with your computer—in English. With CP+ add-on software, you can.

CP+ eliminates complicated CP/M® commands, and replaces them with simple English messages, "menus" and directions. It takes the frustration out of CP/M® computing. So even non-technical users are guided through all their computer functions, including "housekeeping" tasks (such as COPY, ERASE, PRINT).

Put an end to "Terminal Fright."

CP+ lets people relax at the keyboard, without fear of making mistakes. With the CP+ Demonstration and Self-Teaching Guide they learn fast, and enjoy themselves. As their anxiety level goes down, your productivity goes up. And speaking of productivity...

CP+ friendliness sets a faster pace.

The easier it is to control your computer, the more you get out of it. So CP+ offers features like single-key program selection. And, among many others, print queuing, where you line up additional printing jobs while the first one is still running.

Easy to install. Hard to resist.

You can install CP+ in as little as ten minutes. And evaluate it risk-free for up to fifteen days. Order it from your dealer, mail in the coupon, or call us toll-free—and get acquainted with CP+. The \$150 add-on Control Program that speaks your language.

CP+

800 227-2400 X975
In California, 800 772-2666 X975

Yes! Send me more information. I'd like to read the CP+ brochure, and learn how much easier using CP/M® can be. Also, send me the name of my nearest dealer.

NAME _____

COMPANY _____

ADDRESS _____

CITY _____

STATE _____

ZIP _____

TELEPHONE () _____

DISK SIZE: ☐ 5¼" ☐ 8"

NAME and MODEL OF COMPUTER _____

taurus
Software

Software that speaks your language.™

Mail to: Taurus Software
870 Market Street, Suite 815
San Francisco, CA 94102
Tel.: (415) 788-0888
DEALER INQUIRIES INVITED

CP+ runs on all systems using standard CP/M® V1.4 or 2.2. On receipt of your order, Taurus will call you to confirm your system hardware details.
CP/M® is a registered trademark of Digital Research Corp.

problem with the INPUT\$() statement is that it considers the carriage return as a key in its count, thus, if you want a user to type the password "THOM" followed by a carriage return, you would have to use an INKEY\$(5) statement, not INKEY\$(4) as it may first seem.

Q: Do you send out the names and addresses of your customers?

A: With few exceptions, no. To do so would be a violation of our customer's privacy. In fact, we have only used this list to provide further information to our customers, as in the case of the upgrade to the keyboard and manual, or in the case of the first issue of this magazine. Occasionally we also use a few names from the registered owner list to ascertain the level of support and cooperation they received from their local dealer.

The exceptions to our rule are those companies that provide us software. In order to provide the software in the first place, we entered into agreements that require us to provide the names and addresses of all registered Osborne owners to these companies. We cannot force these com-

panies not to mail anything to the names on the list we provide. At the same time, however, to my knowledge none of these companies has sold the list to others for promotional use.

In short, we use the list of Osborne 1 owners as a means of communication with them, if, and when, necessary.

Q: Why don't you put slim-line or 3-inch disk drives in the Osborne 1? Then you'd have room for a bigger screen.

A: When the Osborne 1 was first designed, slim-line 5¼-inch drives did not exist. The 3-inch drives you refer to are only available from a single source—Sony—a situation that we try to avoid.

Remember, we make a lot of computers. When new products are introduced, they exist in small quantities. We cannot afford to tie up our manufacturing of computers with promises of delivery of drives. Currently, we require over 20,000 disk drives a month, and this number is rapidly growing. When quantities of slim-line drives are available to us

from multiple vendors, we would consider making a switch, if nothing else, to save some weight and to make better use of the air space inside the machine.

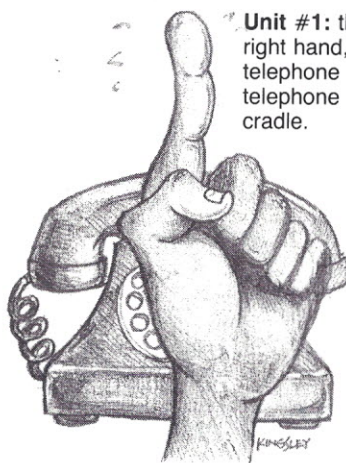
Q: How about 80-track drives, or double-sided ones?

A: We know you folks want more disk storage space, and we're working on it.

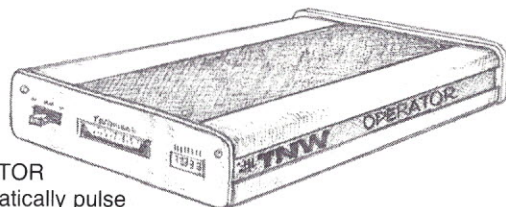
You have to remember, however, that almost none of the components available in the microcomputer industry were designed for the portable environment our computer relishes. In some cases, components are available that, according to their specifications, shouldn't even be shipped via UPS or the Postal Service!

Our initial opinion concerning 80-track and double-sided drives was that both would require too much periodic maintenance to be considered. The alignment tolerances on the 80-track drives, for instance, are extremely critical for proper operation; this is doubly true if you also have double density. Some of the newer drives use different head-

Digital Dialing Units For Your Acoustic Coupler



Unit #1: the index finger of your right hand, used to manually dial a telephone number and place the telephone handset in the coupler's cradle.



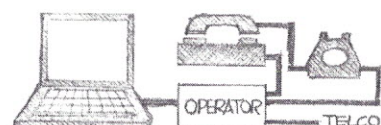
Unit #2: TNW's new OPERATOR Automatic Calling Unit, automatically pulse dials under computer or terminal control. Also provides unattended telephone answer capability. Use it with your acoustic coupler or most direct connect modems. 110 to 300 bits per second, powerful command interpreter, RS-232 interface to computer or terminal. Complete with power supply, cabinet, documentation, and full one year warranty for only \$129.



TNW
CORPORATION

Dept. 9

3444 Hancock Street, San Diego, CA 92110
(619) 296-2115 • Telex 11 910-335-1194





positioning technology and hold better promise, though. One small problem that hasn't been taken care of yet is the price. At present, to offer 80-track drives as an option would make their list price about half that of the computer itself. Double-sided drives are even more expensive.

Technically speaking, there is nothing to stop someone from substituting higher capacity drives for the ones we supply. Only a few changes would have to be made to the software, most notably in the COPY program and the CP/M BIOS (Basic Input Output System).

Q: I need a 16-bit option, when can I get one?

A: I would have to question your

reasoning for wanting a 16-bit processor at this time. Software for 16-bit CPUs is just now becoming available and is still a long way from maturing to the state of 8-bit software.

Add to this the fact that the promise of increased computing speed is often never met, and you can see why I question your reasoning.

In reality, the only good, solid, substantiated reason to get a 16-bit computer at this time is for the increased memory that is available. Even this, though, isn't the nirvana that it first seems. The IBM Personal Computer, for example, is capable of having more internal memory than it has disk capacity on two drives. How, then, do you make efficient use of this added memory?

With software, of course, and that brings me back to my first observation. Besides, I happen to have 128K of memory in my Apple II computer (I don't use it much anymore, as you may guess) so you can bet it won't be long before someone figures out how to expand the Osborne 1's memory.

I'm sure that Osborne will someday be making 16-bit computers. But I suspect that such a computer will result from the maturation of the software marketplace, not from any technological or state-of-the-art considerations. We build computers to be used, not to be worshipped.



FREE
with software purchase
ONE CP/M HANDBOOK

DISCOUNT SOFTWARE

OSBORNE 1™ COMPATIBLE SOFTWARE

* = indicates Custom Download. Allow 2-3 weeks delivery.
(More software available when double density disk drives are released)

LANGUAGES

PRODUCT	MANUFACTURER	DISK & MANUAL/ MANUAL ONLY
*CB-80	Digital Research	\$500/30.00
Basic Compiler	Microsoft	\$350/NA
Fortran-80	Microsoft	\$349/NA
Macro-80	Microsoft	\$150/NA
Forth (Z-80 Version)	SuperSoft	\$149/30
Fortran W/Ratfor	SuperSoft	\$300/35
*C' Compiler	SuperSoft	\$200/20.00
*LISP	SuperSoft	Call
*ADA	SuperSoft	\$250/NA
*CICSOBOL	Micro focus	\$850/NA

STATSGRAPH

Use your OSBORNE 1 to perform statistical analysis and graphing! Includes pie graph, bar graph, and scatter graph.
No special graphics hardware needed \$198.00

UTILITY PACKAGES

*Z-SID	Digital Research	\$ 90/15
*DeSpool	Digital Research	\$ 30/10
Edit-80	Microsoft	\$120/NA
*Crosstalk	MicroStuf	\$150/NA
Lynx	Redding Group	\$250/NA
TRANS 80,86,65,69	Sorcim	\$125/NA
Diagnostics II	SuperSoft	\$100/20.
Disk Doctor	SuperSoft	\$100/20
Utilities I or II	SuperSoft	\$ 60/NA

APPLICATION PROGRAMS

FABS	Computer Control	\$195/20
Ultra Sort II	Computer Control	\$195/25
Micro B+	Faircom	\$259/20
Mathe Magic	Int'l Software Marketing	\$ 95/NA
Super M-List	SuperSoft	\$ 75/NA
Stats Graph	SuperSoft	\$198/NA

ORDERS ONLY—CALL TOLL FREE VISA • MASTERCHARGE
1-800-854-2003 ext. 823 • Calif. 1-800-522-1500 ext. 823

Outside Continental U.S.—add \$10 plus Air Parcel Post • Add \$3.50 postage and handling per each item • California residents add 6% sales tax • Allow 2 weeks on checks, C.O.D. \$3.00 extra • Prices subject to change without notice. All items subject to availability • ®—Mfgs. Trademark. Blue Label \$3.00 additional per item.

THE DISCOUNT SOFTWARE GROUP

6520 Selma Ave. Suite 309 • Los Angeles, Ca. 90028 • (213) 837-5141
Int'l TELEX 499-0446 DISCSOFT LSA • USA TELEX 194-634 (Attn: 499-0446)
TWX 910-321-3597 (Attn: 499-0446)

Users' Group

How to Start a FOG or Incorporating Your Users' Group

By Frank Morton

It took us longer than we anticipated, but it is now official—FOG is a Corporation!!! The filing date was June 29, 1982. The official name is FIRST OSBORNE GROUP (FOG was pre-empted, but we can use it as a service mark; and the term "Inc." is neither required nor used here). It has been decided that FOG will become a networked association of affiliated local chapters.

But let me back up a bit here. It all started one meeting when I asked for a consensus of opinion from the assembled multitude and Bob Kavinsky asked "When are we going to get a constitution and bylaws for this group"? If you know me, you have probably guessed that the next step was my talking Bob into "volunteering" as the Chairperson of a Constitution & bylaws Committee.

We were fortunate to get as volunteers Bill Houk, Steve Von Till, and Henry Parsons who is a member of PicoNet (it must have been a workshop meeting). These three are associated with law in their Professional lives. After the first meeting or so they were joined by Jim Schenkel of the San Francisco FOG Group. He is experienced with non-profit corporate law.

It seemed desirable to form a legal organization to protect the members and officers, as well as establish some guidelines for conducting business. This committee worked diligently and forged the basis of a set of bylaws, which should serve us very well. Henry has become very busy and no longer participates, but I thank him and the entire committee for getting us off to an excellent start; it was a JOB WELL DONE!

The bylaws are now finished. They are essentially a foundation for the

corporation to build upon. The bylaws establish FOG as a non-profit corporation organized for charitable, scientific and educational purpose. They call for a board of nine trustees elected by the entire general membership.

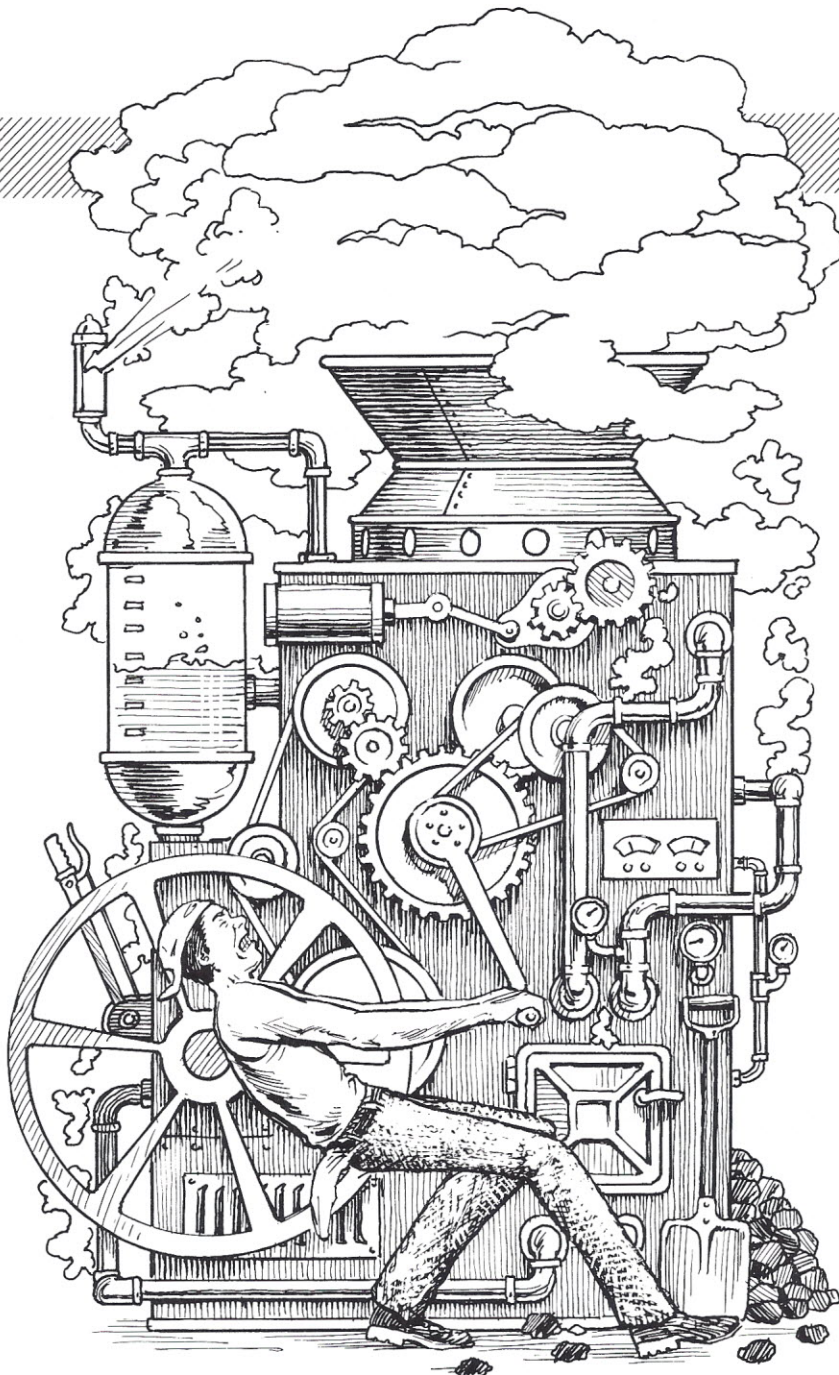
The four elected officers will be chosen by, and answer to the board. The Board establishes all operating policies. The Chairman of the Board is the President. He has no vote except to break a tie and he is not considered a Trustee. Additional officers are appointed by the President with the concurrence of the Board.

The Trustees are answerable to the membership at large. Provisions are

made for amendments to the bylaws. This setup should provide for expedience and simplicity of operation while still leaving ultimate control in the hands of the members.

A copy of the bylaws will be made available in response to the request of any member.

The first official Board of Trustees meeting was held on the 15th of July, just before our regular monthly meeting at the DYSAN Auditorium. As recommended by our legal counsel, I chose nine persons as the Interim Board, and as might be expected they elected the existing FOG Officers to act in the interim until an election of a



new Board of Trustees (March 1982).
The Board and Officers are:

TRUSTEES

Craig Chun
Leo Grandi
Bob Kavinsky
Jim Lantz
David Oates
Gale Rhoades
Jim Shcenkel
Steve Von Till
Kent Walker

OFFICERS

—Elected—

President Frank Morton
Vice President Kent Walker
Treasurer Leo Grandi
Corp. Secretary Bob Kavinsky

—Additional—

Editor David Oates
Disk Librarian Jim Woolley
Corr. Secretary Gale Rhoades
Asst. Treasurer Jim Lantz
Activities Chmn. Craig Chun

The Board includes a good cross-section with 5 founding members, 2 Lawyers, 2 financial experts, 2 relative newcomers, etc. I know that they will work hard to set up an organization which should function smoothly, pave the way for future growth, represent all the members, and create bylaws

modifications which will respond to the needs and desires of the general membership.

A few policies have already been established. The Board decided to employ Gale Rhoades as a part-time contract employee on a trial basis. This should be no surprise, since she has been devoting so many hours on our behalf, and we need to be assured of her continued efforts. The Board agreed to underwrite a telephone line for David Oates, so that he can receive all your FOGHORN submissions on modem!

The Board agreed that FOG will be an association of affiliated chapters, with one chapter being a Chapter-at-Large for all those too far away from others to be able to participate in a Local Chapter. All individual members will be equal (only one class of membership). The full membership fee will be payable to the Corporation, however a 25% rebate of each member's dues will be paid back to the designated Local Chapter to help defray local expenses. EVERY paid-up member has a vote in The Corporation (either in person, by mail, or by Proxy)!!!

The Board of Trustees voted to rebate the 25% to any "authorized Local FOG Chapter"; which is defined

as a group of FOG members or potential FOG members whose proposed bylaws and officers are accepted by the FOG Board of Trustees. We have a set of suggested Local bylaws (with appropriate blanks). They will be provided to anyone who asks for them. The intent is to assure the Board that the proposed Local Chapter will act as a separate legal entity, but with the same general intent and precepts as the parent FOG organization; and that there will be sufficient local officers to keep the chapter viable and in good communication with the other chapters.

The whole idea is to create an affiliated set of networked, autonomous Local Chapters which will be united by the FOGHORN and the Corporate Officers acting under the direction of the Board of Trustees who are elected by the general membership. In this way the Local Chapters can best suit the needs of the Local membership, while the Board and Officers can relay and disseminate information to and between the Chapters, as well as represent the entire membership. In this way we can let our collected views and desires be known to the Osborne Computer Corporation and others in the world of personal computing.

Continued on next page

800-227-4587*

GETS YOU PERFECT WRITER™ \$169

You've seen it advertised by others for \$289. Perfect Writer is the most advanced, full featured word processor that provides split screen editing, virtual memory architecture, personalized form letters, automatic numbering of pages and other features. Extremely easy to learn for beginners or the experienced. Perfect Writer is a product of Perfect Software, Inc.

For Osborne 1™
Computers
All others:
\$249

800-SOFTWARE has Perfect Writer for the Apple II, Heath/Zenith, TRS-80 Model II, NorthStar, Osborne I, Superbrain, Micropolis/Vector, and 8" IBM standard format CP/M* compatible computers.

*In California, call 800-622-0678.

Visa • Mastercard • Am. Express • C.O.D.

800-SOFTWARE™
185 Berry Street
San Francisco, California 94107

Users' Group

In fact, although our primary thrust has been (and will certainly continue to be) towards owners of Osborne Computers, there is no reason why we should not include as members of FOG all persons interested in any type of portable personal computer using CP/M as an operating system!!!

The policy of members paying the entire dues (presently \$24 per year) to FOG with a rebate being paid back to the Local Chapters has been chosen as the policy of the current Board. It will begin with dues of new members submitted with Chapter status application, or with the renewal dues of existing members who wish to be affiliated with an authorized local chapter. To have made the rebate retroactive for all existing members would have potentially wiped out most of the existing treasury.

The 25% rebate was chosen to help defray some of the local chapter expenses while still maintaining enough income to support the expense of the FOGHORN and Disk Library activity. In many cases local chapters will need to find additional sources of revenue to support local newsletters and or other activities that they may want to participate in. As a matter of fact, FOG will need to go to additional efforts to raise funds if our

activities are to be maintained without increasing the annual dues.

Each designated local chapter will be a legal entity recognized by the FOG Corporation. It should have its own governing body (Board?) and at least a President, a Treasurer, and a Disk Librarian. Example bylaws and method of operation for the local chapters will be made available to those interested in forming chapters. Interested groups should notify us at:

FOG
P.O. BOX 11683-A
Palo Alto, CA 94306.

We are excited about our progress! Although a Silicon Valley Board was designated in the interim for expediency, we want to satisfy the wishes of the majority of all members, everywhere, and we want to encourage your active participation. Your comments are solicited.

How To Start Your Own Chapter

I have been asked from time to time "How does one go about creating a USERS' GROUP?". The correct answer no doubt varies with location, persons involved, and a variety of other factors. I will be happy to tell you how FOG was started, with emphasis on tips that hopefully will be useful, wherever you may be.

To start with, although the end result may vary, I think the primary purpose for starting a Users' Group is to form a means of communication with other persons with similar equipment, problems, and general interests so that all may learn through a mutual self-help program. There is an added benefit that most members of the group have no external bias to slant their teachings or recommendations.

The first and most important thing in starting a Users' Group is to get help! Find others who not only want to belong to the group, but are actually willing to help. Those who make suggestions are best qualified to implement their own ideas! Do not be afraid to ask for help! Delegate assignments just as much as the other members will let you! Otherwise, you wind up doing it all yourself; in which case you might as well start a business in teaching about computers.

It is most beneficial if you can enlist the aid of a local Osborne Dealership and its sales people. Granted, their viewpoint is biased, but there is a lot that they can do to help. With the right kind of approach you can help the Dealer realize that there is a lot that your Group can do for them! In addition to making your members familiar with the Dealer's store and its person-

OSBORNE INDEPENDENT TRAINING

by J. Gaudio Company

Specializing in Service to Users of the Osborne 1™

Education & Training ☐ Product Development ☐ Telephone Consultation

J. Gaudio Company, creators of the Magic Box™ and the Static Leash™, is helping Osborne users from Florida to Canada through telephone consultation. Call us for the answer you need. In Denver, visit J. Gaudio Company's Osborne independent training center for hands-on experience.

**J. Gaudio Company ☐ P. O. Box 27826 ☐ Denver, Colorado 80227
Telephone (303) 934-1407 ☐ "SOURCE" TCZ707**

nel, participation of its salespersons in your users' group can be very educational for the salespersons and thereby benefit the Dealer.

If there is a nearby users' group for some other purpose in operation, they may help. You can at least study how they operate. I was fortunate; Byron McKay had already started a local CP/M Users' Group called Pico-Net. With their help I started collecting names at the local Dealer from other Osborne purchasers until we had 15 or so interested persons.

The Digital Deli—a local computer store—extended to FOG the 5-10% Users' Group Discount that Pico-Net members enjoy. Of course that helped to recruit new FOG members, but it has also brought a lot of return traffic to the Deli for Software and Peripherals. If you can establish a good rapport with the local Dealer, it can be mutually beneficial.

An extremely important item of concern in any Computer Users' Group is that you DO NOT CONDONE PIRACY or support it in any way! The concept of a Computer Users' Group unfortunately has a bad connotation with many software manufacturers and many retailers because some Groups have been lax about this issue. The reputation of "Organized Pirates"

holding meetings for no purpose other than swapping any software that members can get their hands on is an image that we have to constantly fight by explicitly taking a uniform stand against exchange of Proprietary Software!!!

Finding a suitable meeting place is a big challenge! In many cases it is convenient to hold the first meeting or so at the Dealers' Store. Usually the Group will soon be too large for the space. It is just as well, because the group will feel more open and less constrained in their conversation if the meeting is elsewhere.

It is best to enlist the help of founding members to find a suitable location. Often a Savings & Loan will have a meeting room that is offered for public groups, or a local College may make available some space. Occasionally there is suitable space available in a local municipal building. With a business machine such as the Osborne there is an increased chance that one of the members may have a business which could accommodate the group.

Naturally, the idea is to find a suitably large facility, preferably with many electrical outlets, since the Osborne is so protable. We are exceptionally fortunate to learn through the

Pico-Net group that DYSAN Corporation has an excellent auditorium that they make available to Computer User Groups. With luck you might be able to find a computer-related business with an eye to good Public Relations.

I think the size of the group is important. If it becomes too large, it loses the intimacy of the Self-Help exchange that was originally intended! Personally, I believe between 20-100 members is desirable. At the main FOG meeting at Santa Clara we have tried to overcome potential oversize problems three ways. We publish the FOGHORN in an attempt to provide news and information to those who are not able to come to the meeting. We have created a second monthly meeting for the purpose of a Self-Help tutorial Workshop, and are now forming a third meeting on a Saturday. Finally, we have actively supported splinter groups in the greater Bay Area to keep Santa Clara from getting too crowded and to make FOG available at other Bay Area locations without requiring too much long distance travel.

At the main meeting on the 3rd Thurs. we try to have some demonstrations of interesting new equipment and some presentations from persons who can give us useful, up to date in-

Continued on next page

800-227-4587*

**GETS
YOU**

TCS ACCOUNTING

\$199

TCS General Ledger

(provides immediate information of all financial transactions).

TCS Accounts Payable

(vendor/voucher history including check-writing capabilities).

TCS Accounts Receivable

(customer account information aged with invoicing and statement capabilities).

TCS Payroll

(monthly, quarterly and yearly totals for reporting purposes in multiple states, user-modifiable tax tables, W-2s, 941s and checks.)

For Osborne 1™

Computers

All others:

\$249

800-SOFTWARE has the above TCS accounting modules for the Apple, TRS-80 Model II, Northstar, Vector Graphics, Superbrain, Osborne, and 8" IBM standard format CP/M* compatible computers.

*In California, call 800-622-0678

Visa • Mastercard • Am. Express • C.O.D.

800-SOFTWARE™

185 Berry Street
San Francisco, California 94107

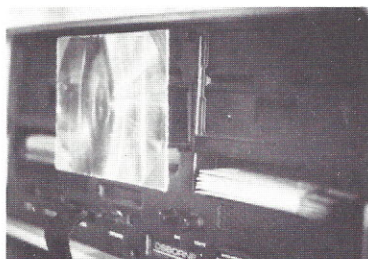
THE OSBORNE'S SCREEN JUST GOT BIGGER

AS AN OSBORNE OWNER,
WHEN DID YOU LAST HEAR:

"HOW CAN YOU STAND
THAT SCREEN — IT'S TINY"?

Well, your tiny screen just got bigger. About 50% bigger, actually. COMSOL, the computer solutions company, has just introduced a screen enlarger for your Osborne Personal Computer.

Like the Osborne 1™, the Screen Enlarger is a high quality product at a reasonable price. It's also portable. Just \$19.95, complete.



COMSOL

P.O. Box 206, Pt. Richmond, CA 94807

Name

Street

City/State/Zip

Calif. Residents add \$1.30 Sales Tax
Money back guarantee

formation. However, at the 1st Thurs. meeting we are interested in small groups devoted to particular topics of interest to increase the chances of learning from each other.

The idea of a Public Access Modem Bulletin Board and/or a Newsletter is very beneficial to a Users' Group. I was very fortunate (again) to have found Daid Oates who has technical writing experience and who volunteered to help with our Newsletter, the FOGHORN. Now we have Byron McKay (415) 965-4097 and Mel Crutts (408) 263-2588, each operating Public Bulletin Board Systems for the benefit of both FOG and Pico-Net. They really help the Groups a great deal! Again, none of this works without the help and support of many persons.

Last, but certainly very important, is the fact that a volunteer organization such as a Users' Group is going to be no more and no less than what the members make of it. One person cannot do it all; it can only be the sum of the contributions of the members. There is a group called the Silicon Valley Computer Club, and IBM Personal Computer Users' Group which also meets at the DYSAN Auditorium, but on the 2nd Wednesday. I was impressed by page 2 of their June 1982 SVCC Newsletter which quoted Jean-

Charles Terrassier (founder of the French Society for Gifted Children) for the following:

How to Kill an Enterprise

1. Don't go to meetings.
2. If you go, arrive late.
3. Criticize the work of the organizers and members.
4. Get mad if you are not a member of the committee, but if you are, make no suggestions.
5. If the chair asks an opinion on a subject, say you have none. After the meeting say you have learned nothing, or tell everyone what should have happened.
6. Don't do what has to be done yourself, but when the members roll up their sleeves and do their very best, complain that the group is run by a bunch of ego-trippers.
7. Pay your dues as late as possible.
8. Never think of introducing new members.
9. Complain that nothing is ever published which interests you but never offer to write an article, make a suggestion, or find a writer.
10. And if the enterprise dies, say you saw it coming ages before.



αβγδεζηθικλμνξοπρστυφχψωΓΔΘΛΞΠΣΤΦΨΩΑΒΓΔΕΖΗΘΙΚΛΜΝΞΟΠΡΣΤΥΦΧΨΩ

TECHNICAL WORD PROCESSOR

WORDSTAR™ + EPSON™ PRINTER WITH GRAFTRAX™ + CHARTECH

$$A = \sum_{n=1}^{\infty} [\Gamma_{\alpha\beta} + \Omega_{\gamma\nu}]$$

$$\frac{1}{2}\sqrt{3}a = a3^{\frac{1}{2}}/2$$

$$\tau = \int_a^b dx \chi_{nn}, \phi(x) \frac{\partial \psi}{\partial x}$$

94 special characters available, your own easily added.
Enter ^Ea, the screen shows a, and the EPSON™ prints α.

All features of the EPSON™ plus SCREEN FORMATTING OF EQUATIONS

Only \$50, CHARTECH software is easily added to WordStar™

TECHWARE, 2510 Cresta de Ruta, Eugene, OR 97403, (503) 343-0566.

™WordStar is the trademark of MicroPro International; Epson and Graftrax are Trademarks of Epson America.

αβγδεζηθικλμνξοπρστυφχψωΓΔΘΛΞΠΣΤΦΨΩΑΒΓΔΕΖΗΘΙΚΛΜΝΞΟΠΡΣΤΥΦΧΨΩ

The Source and the Osborne 1

by Bill Houk

The Osborne 1 is so versatile, it can be used as a peripheral terminal to communicate with large main-frame computers. I use mine to talk to The Source, a shared-time mainframe located in the Washington D.C. area. The basic requirements are an Osborne 1 loaded with the proper software, a modem, a telephone, and a password or other means of entry to the mainframe. The software is readily available to Osborne owners, since one very fine version is called MODEM 7 and is located on Disk 1 of the FOG library.

With MODEM 7 in Drive A, I put a formatted disk in Drive B. At the A>, enter **MDM70S**. A menu will appear; at the end of the menu is COMMAND:

I use a 300-baud modem, so I type **T.300 B:<NEWFILE.TXT>**, in the event that I want to save any part of the session. Then I dial up The Source by calling either Telenet or Tymnet or a local number. The log-in procedures are clearly covered in The Source

User's Manual. If a record of entire session is required, I enter > **Y** (Control Y), to turn on memory buffers. If I do not want to record the whole session (the usual case) another > **Y** will toggle off memory. At the end of the session, I enter > **E** to get the main menu, and then before touching anything else, I enter **WRT**, to empty the buffer and close NEWFILE.TXT on Disk B. This gives as complete a record of the session as is required.

To load data into The Source, I get to (the Source) Command Level to select an option which will accept text input, such as POST (a bulletin board), Mail (Electronic Mail) or File. The following is a sequence which I recently used to demonstrate this capability. The Source response is in upper case, while the Osborne-originated text is in lower case. The Source File which I am creating is called OSBORNE. The file up-loaded is called TESTFILE.TXT, created under WordStar, option N. (Do not use Option D, as the text will have unseen bits, which may make the transfer behave unpredictably unless you strip out the WordStar spacings with **TEXCLEAN.COM** Or **PIP.COM**.)

Command: **T.300 B:newfile.txt**

< cr > (Modem 7 command to get into terminal mode, with a file opened on Drive B for recording purposes.)

Source Log-on procedures:

WELCOME TO THE SOURCE

1. OVERVIEW OF THE SOURCE
2. INSTRUCTIONS
3. THE SOURCE MENU
4. COMMAND LEVEL
5. TODAY

ENTER ITEM NUMBER (4 to get to Command Level)

> (Source Command prompt)

> NAME.TYP (Enter Osborne filename)

BEGIN

Now you type > **T** and enter the filename to be transferred. (**b:Testfile.txt < cr >**) or only < cr > to cancel. At this point, the text prepared and stored on Drive B will scroll on the screen as it is being transmitted.

Transfer complete (Modem 7 message)

(Source Command prompt)

The contents of the file is now on Source. One last item: the file created on WordStar must end with a double < cr > to get back into Source Command Level.



800-227-4587*

GETS
YOU

dBASE II™ \$495

dBASE II is the data base management system against which all others are judged. You'll wonder how you managed without it. dBASE II is a product from Ashton-Tate.

800-SOFTWARE has dBASE II for the Apple II, TRS-80 Model II, Xerox, NorthStar, Superbrain, Micropolis, Osborne, Heath/Zenith, 8" IBM standard format CP/M* compatible computers and others.

*In California, call 800-622-0678.

Visa • Mastercard • Am. Express • C.O.D.

800-SOFTWARE™

185 Berry Street
San Francisco, California 94107

Who's In Charge Here?

by Jim Sack

Do you ever have the feeling that "Ozzie" has a split personality? Sometimes it clanks and whirrs, sometimes she purrs, sometimes he squawks. I recognize a variety of tones when my Ozzie talks to me (when it talks to me), and adjust my conversation accordingly.

A related difficulty arises in talking about (rather than to) Ozzie. For example, when we say CBASIC or MBASIC, sometimes we mean the 'language system' and other times the language itself, or then again maybe we're referring to the actual program which has been written in the language by making use of the language system software.

Much of this schizophrenia and confusion can be traced to the fact that Ozzie, like all computers, can run programs which run programs (which etc.). I like to keep all this straight by thinking of a hierarchy of control—for example, when running my MBASIC program, CHECKBAL.BAS (which helps me balance my checkbook), I see a message on the screen which says:

Enter amount for check number 472?—

I might describe the hierarchy of control (at that moment) as follows:

1. I am in immediate control, since nothing will happen until I type something in.
2. The MBASIC program CHECKBAL.BAS is next in the chain of control, since its statements specify what happens next.
3. Since the program is written in the MBASIC language, the MBASIC system (more precisely, the interpreter part of the program MBASIC.COM) is next-in-command. The language system software is in charge of doing whatever the statements say to do.

Beep The Beeper

by Bob Briggs

Looking through the FOG and CP/M disk libraries the other day I noticed an interesting program called "TEACH" that purported to teach morse code. The problem was that the programmer had never heard of the Osborne 1 and had not taught "TEACH" how to beep the OSBORNE beeper. Of course, beeping the beeper is quite mandatory for a morse code program.

Exploring things documented (like the schematics OSBORNE sent me) and the undocumented (like most of the OSBORNE CBIOS), I found how to beep it, which is what this article is about.

The most obvious way to beep the beeper is to use the ASCII BELL character. This is done by hitting control G when you have the CP/M prompt, or by the statement PRINT CHR\$(7) in BASIC. However, this isn't very satisfactory if you want to vary the length of the beep for the dits and dahs of morse code.

There are at least a couple of ways to control the duration of the beep when beeping the beeper. I'll demonstrate one way with a program written in MBASIC and another way with an assembly language routine.

As shown on sheet 5 of the schematics, the beeper (labeled audio alarm) is driven from bit 5 of port B of a 6821 peripheral interface adapter (PIA) chip. Also evident is that in addition to the beeper, this chip controls what is displayed on the screen and turns the two disk drive motors on and off. Also, the only way to talk to this chip is in shadow mode.

When CBIOS (the CP/M Basic Input/Output System) sends data out to the screen, it checks EF62 hex in RAM to see whether the beeper and the disk drive motors should be on or off. Bit 5 controls the beeper, bit 6 drive A, and bit 7 drive B. Bits 0 through 4 apparently have something to do with the vertical position of the text on the screen (which line is on which row). The following BASIC program demonstrates control of the beeper by setting bit 5 on or off and then sending a character to the screen in order to output data via the PIA chip.

```

10 REM: PROGRAM TO BEEP THE BEEPER
20 INPUT "ENTER A NUMBER FROM 1 TO 5, THEN HIT CR: ",N
30 IF N > 5 THEN 120: REM: EXIT IF N > 5
40 FOR I = 1 TO N: GOSUB 60: NEXT I: REM: BEEP N TIMES
50 GOTO 20: REM: LET'S DO IT AGAIN
60 POKE &HEF62,&H20:REM:BEEPER FLAG ON
70 PRINT I: REM: TURN ON BEEPER
80 FOR J = 1 TO 250: NEXT J: REM: SETS BEEP DURATION
90 POKE&HEF62,0: REM: BEEPER FLAG OFF
100 PRINT:REM:MUST WRITE TO SCREEN TO AFFECT BEEPER
110 RETURN
120 PRINT:PRINT"EXIT IF >5":PRINT
130 END

```

This next routine, which must be located above 4000H to avoid "The Shadow," turns on the beeper for a duration determined by the LXI B and LXI D instructions. The routine drives the PIA directly rather than going through CBIOS as in the MBASIC program above.

LABEL	INSTRUCTION	COMMENTS
BEEP	CALL OEBC9H	;ENTER SHADOW MODE
	LDA 2C02H	;GET PIA STATUS
	ORI 20H	;SET BIT 5
	STA 2C02H	;BELL ON
	LXI B,2	;SET DELAY LENGTH
	CALL DLY1	;WAIT
	LDA 2C02H	;GET PIA STATUS
	ANI 0DFH	;RESET BIT 5
	STA 2C02H	;BELL OFF
	CALL OEBC9H	;LEAVE SHADOW MODE
DLY1	RET	;EXIT
DLY2	LXI D,0	;DELAY SUBROUTINE
	DCX D	
	MOV A,D	
	ORA A	
	JNZ DLY2	
	DCR C	
	JNZ DLY1	
	RET	

In my OSBORNE (MONITOR 1.2) the routines at EBC9 and EBD7 contain the code for entering and exiting shadow mode. If this is not true for your OSBORNE, you'll have to find them, or use the routines shown on page 8-2 of the OSBORNE 1 User's Guide (looseleaf version). Address 2C02 is Port B of the Video PIA. (page 8-38 of User's Guide)

4. Just for the record, the CP/M operating system is, of course, the ultimate piece of software in command. EVERYTHING happens by leave of CP/M, so-to-speak.

Now that I am off on this tangent, I hope you will bear with me while I get one more harangue off my chest. CP/M being a ubiquitous program, it's easy to forget it is a piece of software that acts as a go-between between our Osborne hardware and our 'applications programs.' One is tempted to think of CP/M as an appendage to the hardware; it makes the 'raw' hardware look like a smarter machine—a CP/M machine.

This is a very useful concept for describing what's going on. Hardly anyone talks to a naked computer; they talk to the CP/M-clothed machine. In fact, this concept can be carried further: when you put your BASIC diskette into Drive 'A' and press return, Osborne has cleverly arranged for automatic loading of the MBASIC software which then sits between you and CP/M. You don't have to say a word to the CP/M machine before Ozzie changes into an MBASIC machine by putting on that overcoat. Unless you make certain mistakes, it

Continued on next page

A CARRYING CASE FOR YOUR OSBORNE!

If you and your OsborneTM are always on the move, you need the Desert Case!

Give your investment the extra protection it needs.

- Detachable shoulder strap for easy carrying.
- Set up and use without taking out of case.
- Bottom cushion makes Osborne stand straight when set on end.
Protects against impacts.
- Side pouch holds 2 disc boxes.
- Lightweight—only 40 oz.
- Quality Construction
 - Vinyl Case (\$57.95) in brown or tan.
 - Leather Case (\$99.95) in white, blue, black, or brown. (Allow 6 to 8 wks for delivery of leather case.)

DESERT COMPUTER PRODUCTS

2304 N. Kachina
Chandler, Arizona 85224

Send check or money order. Free shipping in continental U.S. — add \$10.00 for shipping outside U.S. Arizona residents add 5% for sales tax.



The Desert Case — \$57.95



**30 DAY MONEY
BACK GUARANTEE**

Users' Group

is possible to do your business exclusively with MBASIC and never even know that CP/M is alive. So, now you know that when the 'OK' message disappears, and all you see is the funny little A>, your MBASIC machine has died and you are left face-to-screen with the CP/M machine. Ah soooo! To carry this picture to its limit, I might say that while the MBASIC program CHECKBAL.BAS is running, I am talking with a check-balancing machine.

In the trade jargon, what I have been describing is a series of 'virtual' machines, each built from some 'lower-level' machine by adding some software. From a specific point in this hierarchy, the programs built into the underlying machines cease to be thought of as 'programs,' but instead become part of the 'environment' seen by the user (or user-program) at that point—thus one sees the CP/M program called 'system software,' the MBASIC.COM program called a 'language support system,' etc.

I'm sure I haven't made this concept crystal clear to all, but don't be discouraged, it kind of grows on you. *Editor's Note: This article was originally printed in the newsletter of the San Diego Osborne Users Group and is reprinted here with their permission.*



3-Across Labels With WordStar

How do you print labels on the three across sheets? This is accomplished by first setting up the following dot commands at the beginning of the print command file:

```
.RM 132 (This forces a right margin of 132 columns.)
.PL 6 (This sets the page length to the length of each label with an extra
line for the space between the labels.)
.MT 1 (This sets the top margin to one line.)
.MB 1 (This sets the bottom margin to one line.)
.PO 0 (This sets the left margin to the edge of the paper.)
.OP (This omits the page number.)
.DF FILENAME.TYP (This is the name of your address file.)
.RV name1,address1,city1,state1, zip1
.RV name2,address2,city2,state2, zip2
.RV name 3,address3,city3,state,3 zip3
```

You should set the tabs to 37 and 73 (clear all others) and set the right margin to 132 with hyphen help and right justification off.

You now list the variables (enclosed within "&") in the order you want them printed. On the first line of each label, you probably want the names. Enter **&name1&** starting in column one and follow it with **> P <cr>**. Your cursor will move down a line on the screen but the position will still say line 1, column 1. Press **TAB** to move to line 1, column 37 and enter **&name2& > P <cr>**. Again you will be down one line on the screen but the position will read line 1, column 1. Tab to position 73 and enter **&name3& <cr>** (Do not enter a **> P** before this last **<cr>**). Your position will now read line 2, column 1. Repeat the procedure for this and the other two lines on the labels.

Be aware that printing labels three across in this manner voids the "omit null variable" (/o) option.



Professional Programs
for your Osborne* Computer



Include card number and expiration date.

PHONE ORDERS ONLY: 717-627-0504

Or Write

Post Office Box 1014

Columbia, Maryland 21044

*IBM is a trademark of International Business Machines Corp. *Osborne is a trademark of Osborne Computer Corp. *Mail-Merge is a trademark of MicroPro Int.

MAIL-IT.....\$49.95

Professional mailing list manager stores up to 500 records per diskette. Search and sort on any of 8 fields. Room for 2 names, full address, phone and a comment line. Completely adjustable output formats include directory, labels, envelopes and custom designs. Produces Mail-Merge* compatible files. Handles the new ZIP codes too!

FILE-IT.....\$49.95

Simple screen entry form designer makes FILE-IT a joy to use. Just type in your form directly on the screen and you're ready to begin entering, sorting, and retrieving data and printing reports. Can be used for inventories, indexes, lists, customer or vendor data bases. This is a data base manager that doesn't require a computer science degree to use!

CRYPT-IT.....\$49.95

Encode your sensitive data files using your own personal encryption key. Based on the Federal Data Encryption Standard (DES) developed by IBM*. Protect your trade secrets and ease your clients' fears by using this new entry into the fast-growing field of data security.

All programs include a complete operations manual and master diskette. MD residents add 5% tax.

Manuals only—\$10.00 each, refundable upon purchase of program.

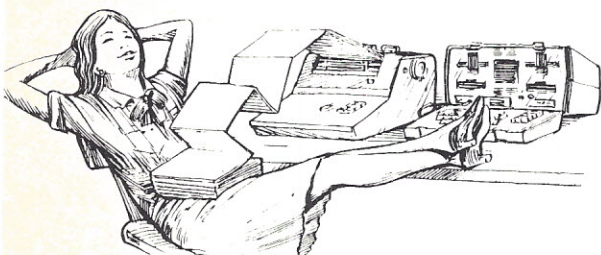
ODDS & ENDS

by Bob Briggs

A few odds and ends cropped up this month that I hope you will find interesting.

First, here's a trick for getting around a WordStar limitation when editing long documents. WordStar does not have a command to advance the cursor to an arbitrary page in a text file. I needed to make a correction on page 8 of a 15 page document I had just printed for final proofing. Unfortunately the cursor was on the top of page one as it usually is when you load a file for editing, and there is no command to advance to page 8. (Fortunately WordStar does allow you to start printing at page 8 after you have made your corrections, or at any time, for that matter.) So, how to get the cursor to page 8 with minimum fuss? Before hearing of the method described here I had been using >QQ>C and watching the screen advance slowly into the document.

A faster way is to count carriage returns using the >QF find command. >QF>N will find a hard or soft carriage return. Thus >QF>N<CR>#<CR> will count # lines because every line ends in a hard or soft carriage return. So, to advance from the first page to the eighth page (assuming you are using WordStar's default of 55 lines per page) you can use the command >QF>N<CR>385<CR>. This advances the cursor by 7 pages since 7 times 55 equals 385 lines.



This next one is a little obscure, but for the record... A letter to the editor in the June issue of *Microcom-*

puting magazine gives a method for setting the baud rate to 9600 at the serial port. The SETUP program only allows 300 and 1200 baud. However, when I tried to get 9600 per the directions in the magazine, it went to 19,200 baud, which is at the upper limit for RS-232. The fastest modem you can buy will only go 2400 baud over public telephone lines, or 9600 baud over specially conditioned leased telephone lines, so this newly documented speed won't help much for transfer of data over the phone. However, for transferring files over a cable from one computer to another via the RS-232 port it should speed things up considerably.

Hallelujah! it finally got here. In yesterday's mail. The OSBORNE 1 *Users' Reference Guide* offered by mail for \$5 to owners of early serial number units that came with preliminary documentation. A big beautiful blue-covered spiral bound fat five hundred page plus collection of information for the Osborne 1 user. I assume it is nothing new to most Osborne owners because it is supposedly the same manual that is now being delivered with the computer. But there is a considerable amount of information that I did not have, so it was worth the \$5 to me.

For example, the commented source listing for the AUTOST.COM program is given as part of an assembly language tutorial on page 247. There is a useful chapter called System Specs. This chapter reveals that the Osborne 1 emulates the Televideo 920C terminal and gives the hex commands for manipulating the screen such as 1A hex (Control-Z) to clear the screen and home the cursor. Page 277 gives the RAM locations for the two tables defining the special function keys.

Although much improved from the preliminary documentation, the new manual remains laced with grammatical and spelling errors. The modem port pinout is defined two different ways. This is interesting considering Osborne's previous ex-

perience as a book publisher and the availability of spelling checking programs.

There are at least two items in the preliminary documentation that I could not find in the new manual. One is the explanation of how to pass arguments to assembly language programs via the MBASIC statement CALL, which is too complicated to explain here. The other is how to patch WordStar to display lines longer than 80 columns without line wrap. The Osborne 1 can handle up to 128 columns, as can my printer. The screen width can be patched using the name WID: in the INSTALL program, or changing the byte at 0249 hex with DDT. Use 120 columns or less (78 hex) or WordStar will clutter up the menu with the statement that screen widths wider than 120 have not been tested.



SURVEYORS

do it

in the field

with a portable Osborne 1™ and DISCO-TECH software.

Civil and structural engineers and architects, too. DISCO-TECH's SURVEY 80 package contains eight professional programs for both field and office: CoGo, FiNDeR, EDM/Topo, Verti-Curve, PLOTTER, Horizontal Curve Staking, STADIA, and MapCheck. Excellent screen format and easy-to-follow documentation.

Also civil and structural engineering programs and DISCO-SPECS specification-writing package.

Get SURVEY 80 for your 52-column Osborne 1 NOW! When the 80 column Osborne becomes available, we'll update your diskettes FREE.

Write or call DISCO-TECH today for free brochures and sample printouts.

disco-tech
T.M.

microcomputer
products
a division of

Morton Technologies, Inc.

600 B Street / P.O. Box 1659

Santa Rosa, CA 95402

707/523-1600 or 527-8500

Dealer inquiries invited.

Learn Morse Code On Your Osborne!

by Bob Briggs

The program TEACH from the CP/M User's library has been modified to work on the OSBORNE 1 and is now in the FOG library. This program will teach you morse code using the OSBORNE 1 beeper.

There are two programs: TEACH.ASM and TEACH.COM. All you need is TEACH.COM unless you want to modify the program, in which case you will need TEACH.ASM.

To run TEACH.COM, get the CP/M prompt A > or B >, depending on

which disk contains the program and then type TEACH <CR>. The screen will show a column of letters along the left margin, each followed by a row of asterisks.

Type any key to begin. Oh, the program will only recognize capital letters. You will hear the morse code for the letter G (dah dah dit) and you should type the letter G before the answer, which is G, appears on the screen. If you hit the correct key the answer will immediately be shown and

the next letter sent. If you hit the wrong key, after a short delay the answer will be shown and the letter repeated.

After you have responded correctly to the letter G a few times, the program will send you a new letter. The more correct answers, the more new letters.

You can check your progress by holding down the RETURN key until the screen shows the rows of asterisks again. The more correct responses you have given for a particular letter, the less asterisks on the row for that letter. The bottom row of asterisks, adjacent to the % sign, gives an average indication of your recent progress.

At this point you can continue by hitting any key, or you can start over by hitting ESC, or you can exit with CONTROL-C.

The speed is set pretty slow. You can vary the speed by modifying the program as follows.

1. Load the TEACH.ASM file with WordStar using the N command. Do NOT use the D command.
2. On the line FREQ EQU 4000 change the number 4000 to suit your fancy. I have tried 4000, 3000, and 2000 so you can be confident the program will work for these. The smaller the number, the faster the speed.
3. Save the modified program with the > KD command to a disk with about 30K or more free space remaining.
4. Remove the WordStar disk, insert the CP/M Utilities disk in drive A, press RESET, then press RETURN.
5. Place the disk containing TEACH.ASM in drive B.
6. Type ASM B:TEACH.BBZ. See OSBORNE 1 User's Guide page 6-4 (loose leaf version) if you want different options.
7. Type LOAD B:TEACH and wait.
8. Type B:TEACH to run the revised program.
9. You can erase the TEACH.HEX file after the LOAD command has finished.



User Group Update

Michael Rulison
Raleigh Osborne Computer Club (ROCC)
3256 Lewis Farm Road
Raleigh, NC 27607

Dennis Harris
Juneau Osborne User's Group
KTTO FM & TV
224 Fourth Street
Juneau, AK 99801

Joel Chabin
Marin Osborne User Group
55 Francis Avenue
Larkspur, CA 94941

Scott Brown
Osborne Computer Owners Klub
PO Box 40429
Pasadena, CA 91104-7429

Michael Zinn
Osborne Users Group
Zinn Associates
15 Birch Lane
Greenwich, CT

John Gaudio
Denver Osborne Group (DOG)
PO Box 27826
Denver, CO 80227

Jim Hicks
Miami Osborne User's Group
7605 SW 71st Avenue
South Miami, FL 33143

John C. Van Horn
Greater Baltimore-Washington
Osborne Users Group
9218 May Day Court
Columbia, MD 21045


Zon Owen
Osborne Hawaii User's Group
1142 Hoolai St #201
Honolulu, HI 96814

In addition, user groups in Surrey, England, Sydney and Canberra, Australia, have been formed. Unfortunately, we've been provided only partially complete addresses for all three, so cannot print any more information this issue.

If you have formed a user group or special interest group specifically for the Osborne 1 computer, please let us know so that we can list your address in the next possible issue. In addition,

all user groups should officially identify themselves to Osborne Computer Corporation, by writing to:

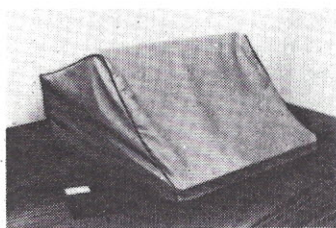
User Group Liaison
Osborne Computer Corporation
26538 Danti Court
Hayward, CA 94545

Osborne Computer Corporation will be sending special packets of information to established user groups in the near future, so make sure that your user group gets on the mailing list. 

Disclaimer

Osborne Computer Corporation does not endorse products that are advertised in this publication, nor are the claims in the advertisements checked for misrepresentations or misleading information. All specification listed for advertised products are those of the advertiser, not of Osborne Computer Corporation. As always, be careful when deciding which items you want to purchase.

When You Buy Quality . . .



Protect With Quality.

COMPARE THESE FEATURES:

- protects against dust, dirt and surface scratches
- unlike vinyl, plastic or nylon covers, static electricity is not a problem
- lint free, top quality broadcloth (65% polyester, 35% cotton) allows ventilation; minimizes risk of condensation
- durable; washable — needs no ironing; maintains proper size and shape
- designed, manufactured and packed in U.S.A.; comes with a warranty against defects in material and workmanship.
- available in Cranberry, Navy or Pewter (each piped in contrasting color) to compliment any decor.

AN IDEAL GIFT: HELP KEEP YOUR INVESTMENT LOOKING AND PERFORMING LIKE NEW!

— Custom Designers and Manufacturers of Computer Dust Covers —

*Osborne 1 : Trademark of the Osborne Computer Corp.

1982 B.L.&W.

SHIP TO: (Print) _____

City _____ State _____ Zip _____ Phone _____

Select Model (check one): Osborne 1 ☐ (Orig. 1st Ed.) Osborne ☐ (Up-grade 2nd Ed.)

Select Color: Navy ☐ Pewter ☐ Cranberry ☐
MONOGRAMMING: (Add \$6.00 per cover, and allow 5 extra days for delivery. We cannot accept returns on monogrammed items.)
Price of Item \$ 15.00
Shipping \$ 1.00
Monogramming \$ _____
(TN residents add .90 sales tax)

Send Check or PRINT INITIALS: ☐ ☐ ☐ TOTAL \$ _____

Money Order to: B.L. & W. - PO Box 381076, Memphis, TN 38138 - 901-754-4465

We Guarantee That Anyone Can Create Professional-Quality Applications with Quic-N-Easi.



15 Day FREE TRIAL...You're Delighted or Your \$195 Back.

No matter who you are. Or your level of computer expertise. *You can create your own applications right on the screen. The fill-in-the-blanks Quic-N-Easi way.*

The results you get with Quic-N-Easi are so amazing, we're confident enough to let you **try it FREE**. On your own computer. Then, you be the judge.

Non-Programmers

If you are not a programmer, listen closely. All you need is **Quic-N-Easi (\$195)** to implement your own custom applications without programming. What's more, your applications will look professional. Run Perfectly. And do exactly what you want them to do.

Programmers

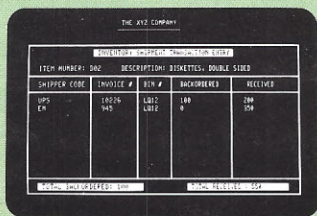
If you happen to be a programming pro, take note that Quic-N-Easi eliminates 50%, 70%, even 90% of the time required to implement commercially viable programs. And the added advanced capabilities of **Quic-N-Easi PRO** insure that you'll never outgrow the System.

How Quic-N-Easi Works

Quic-N-Easi provides a non-programming way to personalize and interconnect preprogrammed building blocks of software that are common to all applications. *If you know your applications, you just follow the guide book to interconnect the building blocks you need by filling in the blanks right on the screen. Presto, you've got your software: formatted screens, file management and generated reports. All in one.*

No Hidden Charges

No surcharge for credit cards—No charge for UPS shipments—Stock shipments next day—Shipped factory fresh with manufacturer's warranty—We accept CODs



Your Input Screens and Output Reports Look Professional, Like These Examples

All The Applications You Want
Quic-N-Easi is the only easy to use applications development system that produces professional looking programs.

Keep track of your inventory . . .

Or your record collection.

Manage project development costs . . .

Or your weekly grocery budget.

Track you sales . . .

Or handicap the races.

Whatever your application or programming skills, you can implement them all yourself, in a small fraction of the time with Quic-N-Easi.

PAGE 1 INVENTORY AS OF JULY 15 1987

ITEM # & DESCRIPTION	QTY	UNIT PRICE	TOTAL VALUE
01 123 WIDGETS GREEN	10	10.00	100.00
01 124 WIDGETS YELLOW	20	5.00	100.00
01 125 WIDGETS RED	10	10.00	100.00
02 201 CARTON SHIPPING	100	1.00	100.00
02 202 CARTON ACCESSORY	50	2.00	100.00
02 203 CARTON INSTRUMENT	20	5.00	100.00
02 204 CARTON SPARES	10	10.00	100.00
03 301 CORD POWER	100	1.00	100.00
03 302 CORD SIGNAL	50	2.00	100.00
03 303 CORD WHEELS	100	1.00	100.00
03 304 HANDLE LIFTING	200	0.50	100.00
	500	2.00	1000.00

Order Your Free Trial Now

To take advantage of this exceptional risk-free Quic-N-Easi offer, Call 800-343-0726

■ **Quic-N-Easi (Application Generation System)**
Price \$195*

■ **Quic-N-Easi PRO (Professional Development Language)**
Price \$395*

System Requirements

CP/M, Z80,
48K, Floppy Disks

Disk Formats

Osborne 5 1/4" (Single Density,
Single Density IBM and
Most 5 1/4" Formats; 8" Single Sided

*Can't Lose Proposition If not 100% satisfied, return within 15 days for refund of full purchase price and tax.

Orders & Information:

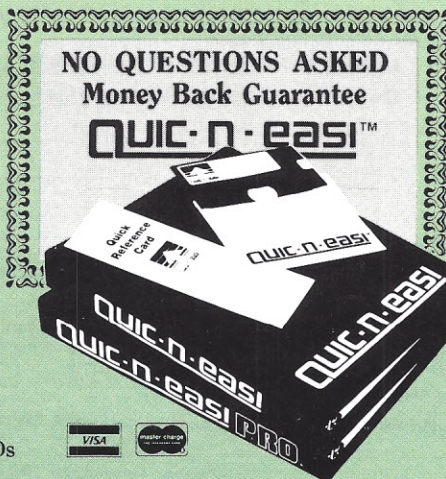
CALL (603)-673-8857

Orders Only: CALL (800)-343-0726

HIGH TECHNOLOGY AT AFFORDABLE PRICES

THE BOTTOM LINE

ELM STREET, MILFORD NH 03055-0423



Microline 82A DOT MATRIX PRINTER



\$439⁸⁸ UPS DELIVERED

- 120 cps, bi-directional, logic-seeking print action
- Parallel & RS-232C interfacing standard
- True descenders on 9x9 matrix, full 96 character ASCII
- Program-selectable pitch, emphasis, & linespacing
- Rear & bottom paper paths take four-part forms

OKIGRAPH Dot-addressable ROM **\$44⁸⁸**
Adjustable Tractor **\$59⁸⁸**
Roll Paper Holder **\$49⁸⁸**

Okidata Printers

MICROLINE 80	\$339⁸⁸
MICROLINE 83A	\$699⁸⁸
ML83A OKIGRAPH ROM	\$44⁸⁸
RS-232C 2K BUFFER	\$159⁸⁸
MICROLINE 84 Parallel	
200 cps	\$1049⁸⁸
MICROLINE 84 RS-232C	
200 cps	\$1169⁸⁸

Anadex Printers

DP-9500A	\$1459⁸⁸
DP-9510A	\$1459⁸⁸
DP-9620A	\$1554⁸⁸
WP-6000	\$2999⁸⁸

Brother Printers



DAISYWRITER 1500 **\$979⁸⁸**
16.5 cps, bidirectional, letter-quality printer with 48K data buffer included. 10, 12, 15 and proportional pitches, uses IBM typewriter ribbons. Friction feed on 16.5" carriage. Tractor option available.
DAISYWRITER 2000—Includes Parallel, RS-232C, IEEE488, & Current Loop interfacing standard **\$1099⁸⁸**
TRACTOR **\$149⁸⁸**

Centronics Printers

CENTRONICS 122	\$819⁸⁸
CENTRONICS 739	
Parallel Interface	\$559⁸⁸
CENTRONICS 739	
RS-232C Interface	\$679⁸⁸
739 COLOR OPTION	\$79⁸⁸

IDS Printers

PRISM 80	\$999⁸⁸
Includes Sprint Mode, Dot Plot, and Cut Sheet Guide	
PRISM 132	\$1699⁸⁸
4-Color Graphics, Sprint Mode, Dot Plot, and Cut Sheet Guide	

CALL FOR PRICES

On NEC Spinwriters, Qume & Diablo Daisywheels. QUANTEX, DATASOUTH, DIP, MPI and other printers available.

TEC Printers



DMP85 **\$479⁸⁸**
Generic version of NEC & Prowriter printers. Features 120 cps, bi-directional, logic-seeking, 1.3K buffer. 5 fonts, 8 sizes on 9x9 matrix, w/proportional print, true descenders, & Greek/Math font. 160 x 144 dots/inch Hi-Res graphics matrix, 1/144" line feed. Friction & tractor standard, rear paper path. Parallel only.

NEC PC-8023A-C	\$509⁸⁸
C.I.TOH PROWRITER	\$509⁸⁸
C.I.TOH PROWRITER	
Parallel & RS-232C	\$664⁸⁸
C.I.TOH PROWRITER 2	\$739⁸⁸
C.I.TOH PROWRITER 2	
Parallel & RS-232C	\$799⁸⁸
F-10/40 STARWRITER 40cps	
Parallel or RS-232C	\$1494⁸⁸
F-10/55 PRINTMASTER 55cps	
Parallel or RS-232C	\$1799⁸⁸
F-10 TRACTOR	\$289⁸⁸

Smith-Corona

SMITH CORONA TP-1	\$649⁸⁸
Specify 10 or 12 cpi	
Specify Parallel or RS-232C	

Microfazers

Stand-alone print/data buffers	
8K MICROFAZER	\$144⁸⁸
16K MICROFAZER	\$164⁸⁸
32K MICROFAZER	\$184⁸⁸
64K MICROFAZER	\$229⁸⁸
ADAPTER CABLE	\$14⁸⁸

Interfaces & Cables

PARALLEL CARD	
For Apple II/II+ w/cable	\$89⁸⁸
PKASO w/cable	\$139⁸⁸
GRAPPLER w/cable	\$149⁸⁸
16K MICROBUFFER	\$224⁸⁸
32K MICROBUFFER	\$259⁸⁸
CBM/PET INTERFACE	\$119⁸⁸
ATARI CABLE	\$39⁸⁸
IBM PARALLEL CABLE	\$39⁸⁸
OSBORNE CABLE	\$39⁸⁸
MODEL I/III CABLE	\$29⁸⁸
MODEL II/16 CABLE	\$39⁸⁸
TRS-80 COLOR CABLE	\$29⁸⁸
TRS-80 COLOR CONVERTOR	
(Parallel to RS-232C)	\$99⁸⁸
RS-232C CABLES—Male to Male or Female to Male	\$29⁸⁸

Hayes Smartmodem

A sophisticated 0-300 baud originate/answer modem, programmable in any language. The Smartmodem features auto dial, auto-answer, full/half duplex, keyboard control, user-selectable parameters, 7 LED status displays, & audio monitor. Comes with modular telephone cable & power supply (RS-232C cable optional)

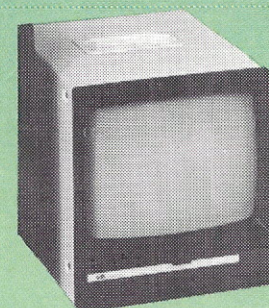
HAYES SMARTMODEM	\$239⁸⁸
HAYES 1200 BAUD SMARTMODEM	\$579⁸⁸
HAYES MICROMODEM II	\$309⁸⁸

MODEMS

SIGNALMAN MARK I	\$99⁸⁸
NOVATION AUTO CAT	\$239⁸⁸
NOVATION APPLE CAT	\$359⁸⁸
NOVATION 1200 BAUD	
AUTO CAT	\$629⁸⁸
NOVATION 1200 BAUD	
APPLE CAT	\$649⁸⁸
NOVATION CAT	\$164⁸⁸
NOVATION D-CAT	\$179⁸⁸

USI Pi Series

AMBER MONITOR



20 MHz bandwidth, 1000-line-at-center resolution, 80 columns by 24 lines—the USI Pi-3 with amber screen redefines quality. Amber makes any display easier to read all day, every day. Used by **THE BOTTOM LINE's** president, the USI Pi-3 Amber Monitor comes with his personal recommendation.

USI Pi-1 (9" Green)	\$174⁸⁸
USI Pi-2 (12" Green)	\$174⁸⁸
USI Pi-3 (12" Amber)	\$194⁸⁸

Amdek Monitors

AMDEK 300G 13"	\$189⁸⁸
AMDEK Color I	\$404⁸⁸
AMDEK Color II	
High Resolution RGB	\$829⁸⁸
AMDEK Color III (RGB)	\$479⁸⁸

NEC Monitors

NEC PC-8041	\$184⁸⁸
-------------------	---------------------------

Zenith Monitors

ZENITH TVM-121	
(12" green)	\$129⁸⁸

Orders & Information: CALL (603)-673-8857

Orders Only: CALL (800)-343-0726

No Hidden Charges

No surcharge for credit cards—No charge for UPS shipping—Stock shipments next day
All equipment shipped factory fresh with manufacturer's warranty—We accept CODs
Open PO's not accepted—No foreign orders accepted
Prices subject to change—call for quotes



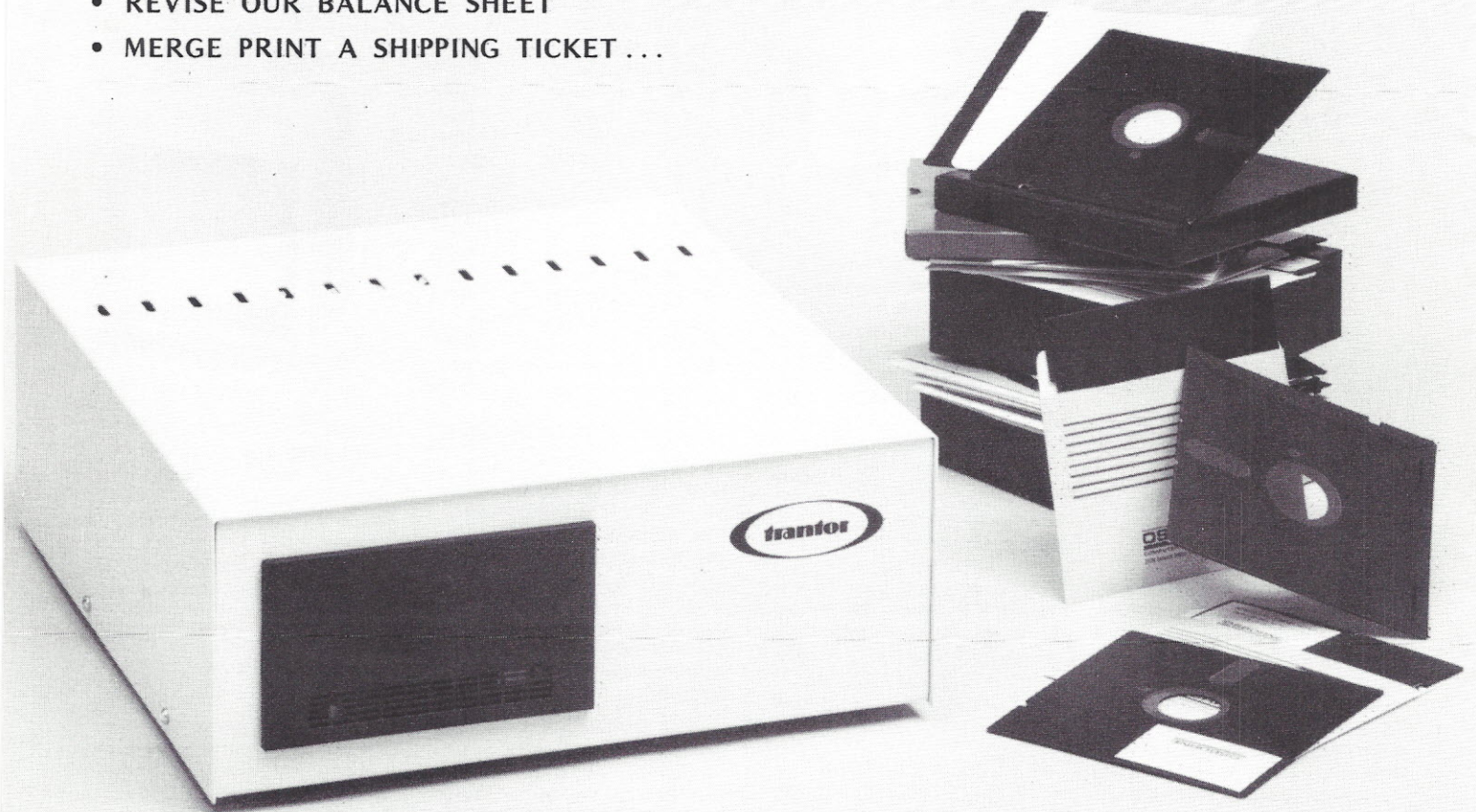
HIGH TECHNOLOGY AT AFFORDABLE PRICES

THE BOTTOM LINE

Elm Street, Milford NH 03055-0423

**"Sure, we can send you 500 widgets tomorrow, and...
with our Trantor hard disk unit we can**

- UPDATE OUR STOCK LIST
- PUT YOU ON OUR MAILING LIST
- ISSUE A CONFIRMATION NOTICE
- UPDATE ACCOUNTS RECEIVABLE
- REVISE OUR BALANCE SHEET
- MERGE PRINT A SHIPPING TICKET ...



ALL WITHOUT CHANGING DISKETTES!"

The Trantor TSL-5 and TSL-10 hard disk storage units increase the capacity of your Osborne 1* computer many times!

Installation is easy -- unpack your disk, plug it into the IEEE port, run a simple 5 minute installation procedure and you're ready for use!

*Osborne 1 is a registered trademark of Osborne Computer Company

Comes complete with BIOS, back-up, retrieve utilities and cable.

TSL-5 \$2995
5 MBYTE

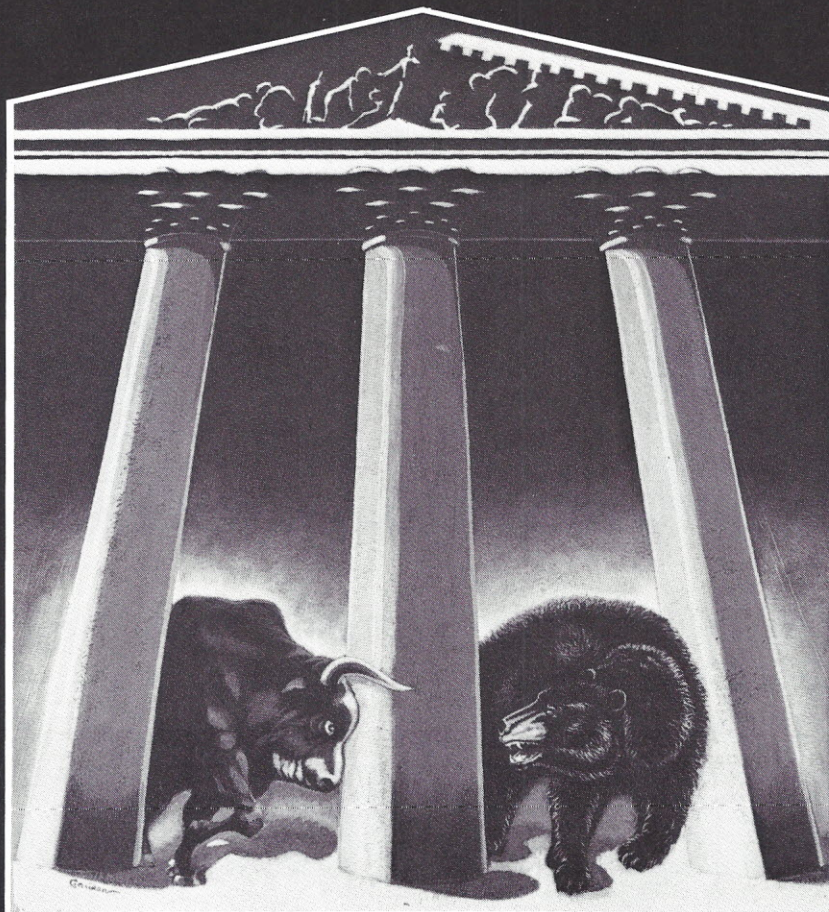
TSL-10 \$3395
10 MBYTE

CONTACT YOUR DEALER, OR:

TRANTOR SYSTEMS, LTD.
4432 Enterprise St., Unit I
Fremont, California 94538
(415) 490-3441



INTRODUCING MILLIONAIRE™... THE ULTIMATE STOCK MARKET SIMULATION!



BUY U.S. STEEL. SELL GENERAL MOTORS. LEARN ALL ABOUT THE STOCK MARKET. AND HAVE THE TIME OF YOUR LIFE DOING IT!

If you've always been bullish about dabbling in the stock market—but bearish about risking your life savings—you're going to love Millionaire! Because Millionaire offers a unique, no-risk scenario that stretches your decision-making acumen to the limit.

Millionaire™...the game!

You start your financial adventure with \$10,000. From there, you wield the power to buy and sell stock from the world's largest corporations. But make sure your skill and logic are at their sharpest, because Millionaire's week-by-week format presents you with a steady stream of real-life industry trends. Analyze these correctly (and invest wisely!), and a financial empire is yours. Ignore them, and run the risk of losing your venture capital.

Millionaire™...the learning aid!

There's much more to Millionaire than exciting, realistic game action—because Millionaire is a learning tool of incomparable value. In fact, once you've read the comprehensive user's manual, you'll be amazed at how much you've already learned about the stock market.

Call options. Put options. Borrowing against your net worth. Buying on margin. It's all here in the most accurate simulation of its type. Maybe that's why today's largest investment houses are finding that Millionaire is the ideal learning aid for their brokers.

Is Millionaire a game or a financial tutor? You decide. Just remember... your financial future rests on your ability to effectively manipu-

late your stock portfolio with utmost skill and daring.

Millionaire. A superb game. An invaluable learning experience. And the best reason ever to own a computer! Available at finer computer and software stores or may be purchased directly from Blue Chip Software.

Available on disk for:

\$79.95—Apple II with 48k RAM; Apple III in emulation mode;

\$99.95—IBM PC with PC DOS and 64k RAM; Osborne and other CP/M systems with Microsoft Basic

Apple II and III are registered trademarks of Apple Computer, Inc. IBM PC is a registered trademark of IBM Corporation. Microsoft Basic is a trademark of Microsoft, Inc. CP/M is a registered trademark of Digital Research, Inc. Osborne is a trademark of Osborne Computer.

Blue Chip Software

19824 Ventura Blvd., Suite 125
Woodland Hills, CA 91364
(213) 881-8288

©1982 Blue Chip Software

Smith-Corona introduces the only daisy wheel printer for under \$900.*



You're putting together a desktop computer system for your office or home. And you want to add a letter quality printer so you can do word processing, too. But you don't want to spend a fortune.

Until now, you really had little choice but to settle for dot matrix printers. True, dot matrix doesn't produce letter-perfect printing, but daisy wheel printers just cost too much. That is, they did.

Now, Smith-Corona® offers a daisy wheel printer at such an incredibly low price, you can't afford *not* to get it. (The fact is, you won't find a daisy wheel printer *anywhere* at a price so low.)

The Smith-Corona TP-I™ printer operates with microprocessor controlled daisy wheel technology, and is available with either standard serial or parallel data interface. It is compatible with most microcomputers currently on the market. And, unlike many printers, it's made in America.

Best of all, the TP-I produces results identical to those of our very finest office typewriters—printing with real character. So it can be used to send out letters that have to look perfect. As well as financial statements, inventory reports, direct mail campaigns, manuscripts. Even a letter to your son in college!

Anything at all you need printed.

The basic TP-I will handle letter or legal sized paper. An option that will be available soon will enable it to handle either fanfold or single sheet paper.

The TP-I is easy-to-use—just turn the power on, load the paper, and away it goes. There are drop-in ribbon cassettes and a choice of easy-to-change, snap-on daisy print wheels for a variety of fonts.

So stop thinking you can't afford a daisy wheel printer. Because, thanks to Smith-Corona, a printer with real character is no longer expensive.

Smith-Corona

Please send me more information on the Smith-Corona TP-I daisy wheel printer.

Name

Title

Company Name

Business Address

City State Zip

Mail Coupon to:

Dwight P. Newcomer, National Sales Manager—Office Products
Smith-Corona
65 Locust Avenue
New Canaan, Connecticut 06840

*Manufacturer's suggested retail is under \$900, but prices may vary.

GROWN-UP GAMEWARE™

You write it. We sell it.

At Intelligent Statements,™ we sell the kind of games you like to play on your Osborne 1™.

More importantly, we sell the kind of games you like to **write** for your Osborne 1. Games like **Ken Uston's Professional Blackjack™**, advertised in this issue of Portable Companion. Games like the ones you may be developing right now.

Our game is Grown-Up Gameware.™ We publish intelligent, innovative and sophisticated games that are challenging and downright addictive. If that's your game too, you should try out for our team. Because we also play to win—with outstanding products and aggressive marketing.

There are two ways we can start a mutually profitable relationship.

First, if your gameware is in the development stage, write for our free Author's Kit.

This way we can help you get your game ready for publication.

Second, if your game is past the development stage, describe it in writing or send us a disk (with your personal copyright affixed) for confidential evaluation.

We believe in rewarding creativity. On our team, you'll be a big winner.

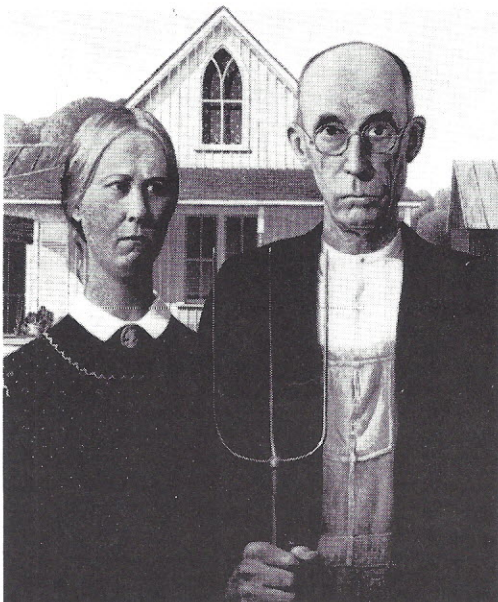
Osborne 1 is a Registered Trademark
of Osborne Computer Corporation

**Intelligent
Statements**™

GROWN-UP GAMEWARE™

The Courtyard Suite 21 P.O. Box 2602 Chapel Hill, NC 27514 919-942-0008

WHY BUY A COPY, WHEN YOU CAN HAVE THE ORIGINAL?



American Gothic — Grant Wood

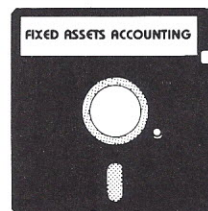
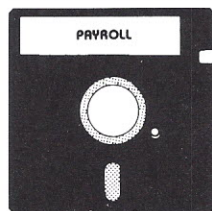
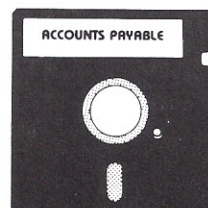
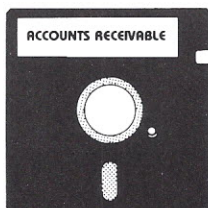
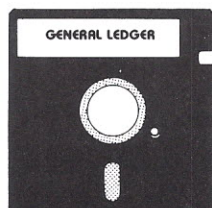
BusinessMaster II is one of the most comprehensive and professional business and accounting packages available. The package consists of various modules which can be run separately or fully integrated: General Ledger, Accounts Receivable, Accounts Payable, Payroll, Inventory Management & Mailing List and Fixed Assets Accounting. See the February 1982 Issue of *Lifelines* for a comprehensive and detailed review of **BusinessMaster II**.

BusinessMaster has been in existence for over 4 years. We are the originators and authors of **VISACCOUNT™**. We have upgraded our original package and made it absolutely the most package for the least money. Through high sales volume, we are able to substantially lower our prices to you.

To those who currently own an end user license for either **BusinessMaster** or **VISACCOUNT™**, we offer **BusinessMaster II** updates and a new manual for \$100.00. If you prefer more advanced capabilities, we have **BusinessMaster PLUS** for \$289.00. This package includes Fully Formatted Data Entry Screens and Fast Access Balanced BTree Indexing.

We offer an unconditional 15-day money back guarantee.

BusinessMaster II



Available for

TRS-80 Model I, II, III,
Apple, Osborne, Heath/Zenith,
North Star, Vector and most other
CP/M computers.

The **BusinessMaster II** package includes:
Nine 5¼" double density disks (or six 8" single density disks) and an easy-to-use operator's manual (over 200 pages).

™VISACCOUNT is a trademark of Computer Services Corp. of America

© 1982 BusinessMaster Inc.

Send \$159 for BusinessMaster II

BusinessMaster Inc.

4317 Sea Bright Dr.
Carlsbad, CA 92008

Order and Technical Number (714) 729-0300
(714) 729-7320

Name _____

Address _____

City/State/Zip _____

☐ Visa ☐ Mastercard

Number _____ Expires _____

Your System _____

Disk Size ☐ 8" single density ☐ 5¼" double density

Dealers, Distributors and Manufacturers Inquiries Welcome.

Who said it was only a business computer?

Games

- Valor** — An arcade adventure game with constant mapping. You'll never play the word type again! You are in an infinitely tall tower, working your way up. High score stored, progressive difficulty. \$20
- Artist** — It draws or you draw using all graphics, then save screen. A programming tool as well as good fun. \$20
- Maze War** — Battle 4 species of monsters in an infinite maze (uses all Osborne™ screen space). An arcade game worth the quarters. \$20
- Star Trek** — The classic for Osborne graphics and printer (optional). \$15
- Catacomb** — Descend into the depths, picking up points and prizes. \$18
- Boggled** — Better than the popular word game. For two or more. \$15
- Falklands** — A huge simulation game with land, sea, and air dimensions. \$20
- Land!** — Clear terrain before making forced landing. \$12
- Numbug** — Clean up bacteria before they multiply. \$12
- Tag** — With a friend. More fun than you can imagine. \$12
- Trapper** — Trap another player — great for all ages. \$15
- Acid Rain** — Neutralize rain as it falls before it destroys crops. \$12

General

- Attender** — keeps track of attendance for up to 600 for school, church, work. Gives data for date or individual. \$20
- Grader** — Attender plus records of performance of up to 160 on one disk. Reports on printer or monitor. Meets state requirements. \$25
- Grader II** — As Grader above, but with extended statistics on grades: standard deviation, curves, rankings, suggested letter grades based on your preset criteria. A painless way to grade fairly. \$35
- Pollster** — Allows Osborne to ask questions of a group. Easily file access, compatible with WS and data base managers. \$30

- * All programs in fast machine language.
- * All programs use Osborne graphics.
- * All programs written for the Osborne.
- * All documentation on disk — nothing to lose.

Add \$2 per order P&H. PA residents add 6%.
10% discount on program shipped on same disk with another. Send check or VISA/MC info or call. COD OK.

Portable Software

216 Penn Avenue
Oxford, PA 19363
(215) 932-4247

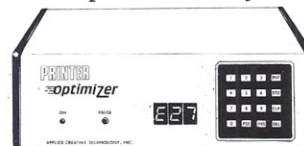
Dealers inquiries invited.

Programmers! Let us market your creation! Write.

Osborne is a trademark of Osborne
Computer Corporation.

Do You Use a Printer or Modem?

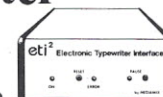
The average microcomputer "moves" data at 120,000 characters a second. A typical disk drive transfers it at 27,000 CPS. Most printers however plod along at 100 CPS and many modems squeak out 30 CPS. That's quite a drop in efficiency not to mention a waste of computing power!



We've broken
this bottleneck
with a smart little

"white" box called the PRINTER OPTIMIZER® that features a 64,000 to 256,000 character memory buffer. Now you can "print" your inventory in 2 seconds instead of 10 minutes, and no longer will your computer be tied up transmitting or receiving modem transmissions. The OPTIMIZER is smart too. You'll notice a keypad and display in our picture. You can tell the OPTIMIZER to convert data, send control sequences, pause on cue, and more. For example: access all of your printer's capabilities (graphics, font size, forms control, special symbols) with the ease of selecting a station on a pushbutton car radio. Use it to adapt an XYZ printer to your ABC computer running a PDQ word processing program. Run a serial printer or modem from a parallel port. If you can afford and justify a disk drive, then you certainly need our OPTIMIZER to bring your printer, plotter or modem "up to speed" with the rest of your system.

If You Need A Letter Quality Printer



...then consider our affordable yet high quality alternative. Our MEDIAMIX ETI²® converts an IBM Electronic Typewriter (and some other brands) into a computer printer. Every office needs a typewriter. So for example, you can buy an IBM Model 50 ET that costs about \$1200 and have a superior typewriter, and then with our ETI² have a printer that produces probably the highest quality printed image available. You can even do typesetting like this ad! And for financial printing you can't beat a wide carriage IBM ET. It's a truly cost effective investment. There are a number of arguments in favor of choosing this route over a single use computer printer, and we have an article on this subject you should read.

We apply technology creatively, with insight and with respect for the non-technical end user. Feel welcome to write or call our toll free number for more information.

**APPLIED
CREATIVE
TECHNOLOGY, INC.**

2723 Avenue E East, Suite 717
Arlington, Texas 76011
(817)-261-8905
(800)-433-5373

COPYRIGHT 1982

NEW FROM OSBORNE™

FIVE BRAND NEW OPTIONS FOR YOUR OSBORNE PERSONAL BUSINESS COMPUTER.

Now you can make your Osborne even more useful, more efficient, and more fun with five exciting new offerings from Osborne Computer Corporation:

1 COMM-PAC™.
Complete with modem and software to let you send or receive files and information from Osborne to Osborne, or other computers, at electronic speeds. Includes a subscription to The Source® – your connection to advance UPI news, electronic bulletin boards, data banks, and more. Plus 30-day trial use of the Dow Jones News/Retrieval Service® – your instant connection to Barrons and the Wall Street Journal. And that's just the beginning of the data resources on the way.
The price? Only \$265.

2 POWR-PAC™.
A portable, rechargeable battery that enhances the portability of your Osborne Computer. You get a minimum of one hour's operation (depending on disk drive usage) without AC power. You can even run your Osborne from a standard automobile cigarette lighter.
The price? Only \$345.

3 START-PAC™.
A quick self-instruction system to guide you easily through the basics of WordStar®, SUPER-CALC™, and CP/M®.
The price? Only \$49.95

4 WARRANTY-PAC™.
Now you can extend your Osborne's warranty coverage for a full year past the original 90-day warranty.
For only \$285.

5 WORD-PAC™.
Five software packages to ease your writing tasks: Spellguard™, Grammatik™, Footnote®, Math™ and Documate/Plus™.
This \$695 value is priced for Christmas at only \$295.



OSBORNE™
COMPUTER CORPORATION

Trademarks: COMM-PAC, POWR-PAC, START-PAC, WARRANTY-PAC, WORD-PAC; Osborne Computer Corporation • SPELLGUARD: Innovative Software Applications • GRAMMATIK: Aspen Software Company • MATH: Force Two, Limited • DOCUMATE/PLUS: The Orthocode Corporation • SUPERCALC: Sorcim Corporation.

Registered Trademarks: WordStar: MicroPro International of San Rafael, California • FOOTNOTE: Pro/Tem, Inc. • The Source: Source Telecomputing Corporation • Dow Jones News/Retrieval: Dow Jones & Company, Inc. • CP/M: Digital Research, Inc.

Automatic Line Numbering

An MBASIC Solution

by Richard Drakeford

The Osborne 1 handles a multitude of numbers with a high degree of precision. Most humans find it easier to deal with general concepts and overall structures. When man looks at the sky he instantly discerns constellations, which he labels. A computer would more likely count each star and list its coordinates to the 12th decimal place.

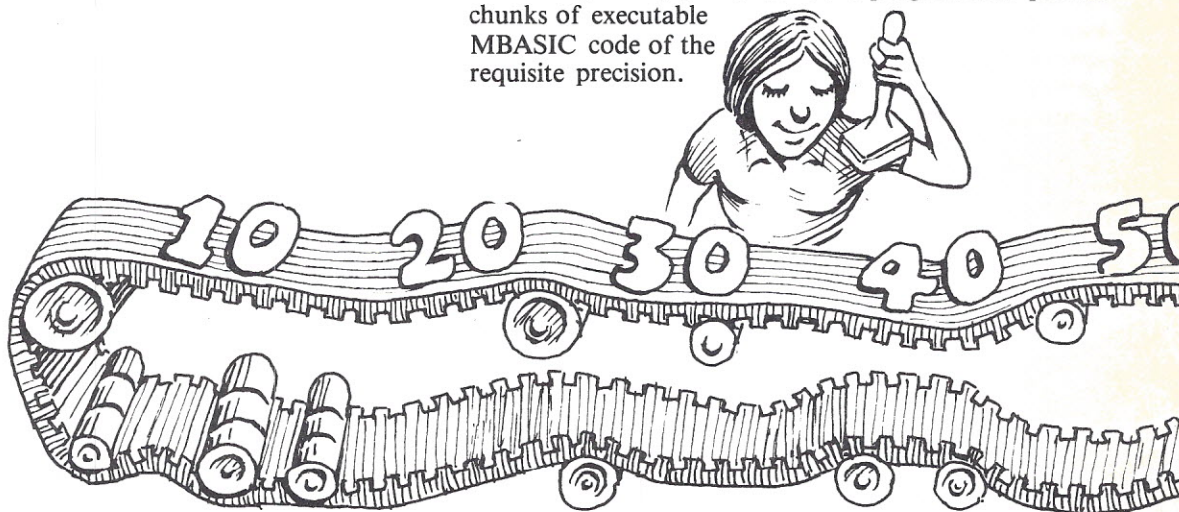
Unfortunately for we imprecise human beings, the vocabulary and syntax of the MBASIC language is not generalized and is terribly unforgiving of even the slightest human sloppiness. In particular, the strict necessity to number each line and keep accurate track of those encumbering line numbers is the kind of bothersome task many of us find frustrating.

Luckily for us, however, line numbers are the kind of detail work with which your Osborne 1 likes to assist. So let the Osborne handle those pesky line numbers: In just a minute you'll see how that's done.

If one problem for humans programming in MBASIC is the extreme precision required to create executable code, another is the difficulty of editing with MBASIC's limited line editor. Correcting mistakes, moving code around, and indenting your code to show the flow of control and improve human readability—all of these processes are hard to do when all you can access is a single line at a time. Programs in the process of being written seem as intractable as stone is to the sculptor with only one blunt chisel. And very few of us are Michelangelos.

It helps a great deal to do the bulk of your programming with the sharp tools of a word processor. You have easy access to a whole screen at one time instead of working line by line. Actually you have freedom of movement throughout the entire file.

The Osborne 1 comes equipped with WordStar—which has many very sharp tools. You can start with rough draft and piece by piece, refine the program into precise chunks of executable MBASIC code of the requisite precision.



How to create programs with WordStar

For programming, use WordStar's Nondocument mode, which makes ASCII-compatible files of words and symbols. This includes those files of MBASIC code under discussion, known as programs. A program is nothing but a file of language symbols and numbers; at least until it is loaded into the computer and run. A correctly configured program loads and runs whether it was written the hard way—in MBASIC—or the easier way, with WordStar.

Your first draft can be written in a pseudocode—a symbolic notation of your own devising, more or less in English, (see example) which makes the program logic as clear as you want it to be. As shorthand, personal abbreviations of one or two keystrokes can be used during drafting and later expanded automatically by WordStar. ("LP" could signify LPRINT during drafting. Later, use ^QA to find all "LPs" and replace them with LPRINT.) Use WordStar's place markers to jump around the program, from sub-routine to main code and back. If a line of code is to be repeated here and there, mark it as a block and copy it to wherever it is used again.

First-draft program modules can then be refined and translated module by module into precise MBASIC vocabulary and syntax. Once done, each module can be sent off into a file of its own and held. Final assembly of the entire program can be done by reading all the files into one master program (using WordStar's KR command).

Creating Those Pesky Line Numbers

The bugaboo of MBASIC programming is the requirement for line numbers. A solution to this problem is to forget about line numbers for a while: Do your programming within the text editor with NO line numbers: just leave them out. Let your Osborne number the lines for you when you have the sequences all doped out.

Besides the dreaded line numbers themselves, you have line number references within the program to contend with, following executable code statements like GOTO, IF...THEN, GOSUB and so forth. These are always a pain to deal with because you seldom know the exact numbers in the early stages of the program. Well, again, just forget about the numbers. Use temporary labels for a while until you find out what line numbers are going to

be assigned by the machine. Let the machine deal in numbers. Humans find it easier to deal in labels for concepts, like "Big Dipper" or ::dataentrysub."

To prepare for machine numbering, finish your final editing of the file you are working on. Use the cursor to move down the program text and put leading apostrophes on all your comment lines. Put leading colons on all lines you want to leave blank. Pretty up and point up the logic structure with indentations and blank lines that make the logical sequence clear. Delete any unwanted comments and other stuff that has turned out to be extraneous. Use ^KD to save the file.

Now to get the numbers on the lines. Exit WordStar (or use "R") to run the all-purpose program PIP. Using PIP's [N2] parameter, copy the file into a new file. For example, you might use the command:

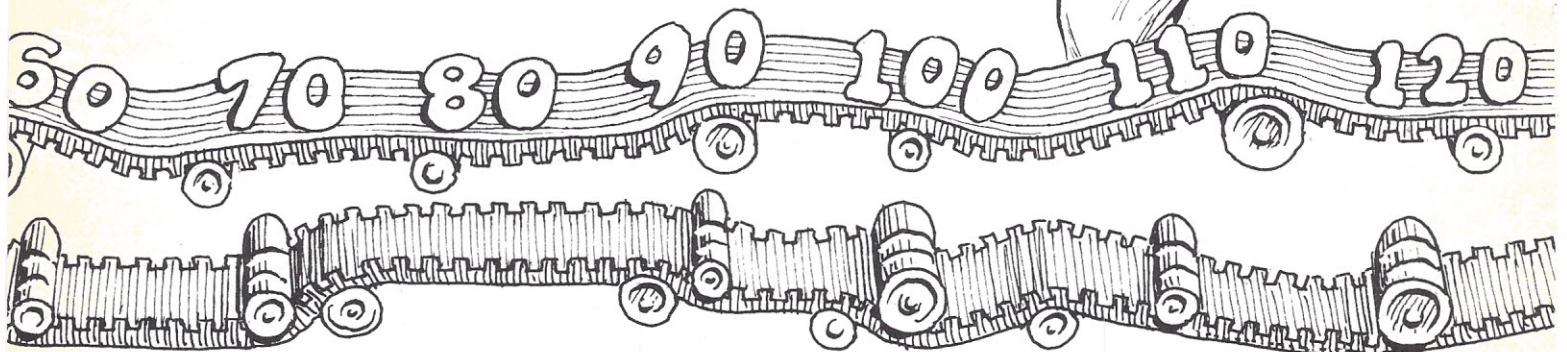
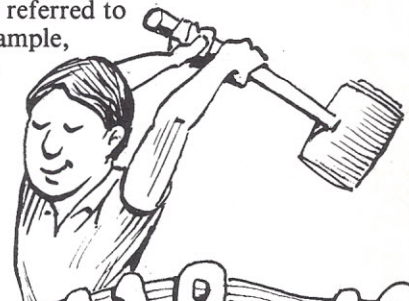
PIP B: PROGRAM.

NBR = B:PROGRAM.DFT[N2]

with the titles indicating the progression from the draft version written with WordStar's nondocument mode, to the line-numbered version.

PIP's [N2] parameter installs a 6-digit number at the start of each line. Most of the digits are leading zeros. The first line is 000001, for example. These are followed by a TAB character (which is only two spaces wide when the numbers occupy the first six columns—the first tab position is at the eighth column). Then comes the text: the program code lines and comments you wrote unnumbered. The PIP-installed line numbers are readable by MBASIC even though all those leading zeros make them look different. And, except for the internal line number references within the program, your program would now be loadable and runnable.

To clear up those internal line number references following GOSUB's AND GOTO's, etc., reaccess the numbered version of the file using WordStar's nondocument mode. Inspect the program by coursing through it and visually detect the line numbers at which your subroutines and referred-to sequences of code begin. Make a pencil note of the line number which starts each sequence you have referred to in the program. For example, you might find that the data entry subroutine



starts on line 000017, or 17. (Or if using a pencil is too old-fashioned, make a quick note on the screen, mark it as a block and move it to the front of the file where you'll need it. Later you can delete it.)

Now, find and replace your internal reference labels starting from the beginning of the file (This is important if you don't want to miss any). Use WordStar's **QA** find and replace operation to find the labels you used for references and replace them with line numbers. For example, you might find "dataentrysub" and replace it with "17." Code lines which read "GOSUB dataentrysub" would now read "GOSUB 17." When you have located all the internal line number references and switched them from labels to numbers, your program is loadable by MBASIC.

Save the edited file. Now, make sure that the file name includes a type designation of .BAS if you have been using something else. Exit WordStar.

Invoke your MBASIC interpreter and tell it to load the program. Note that when MBASIC loads the program, it ignores all the leading Os. You won't see them if you LIST the program. At this point they are still in the file, however.

As your final editing step, use MBASIC's RENUM command to get more suitable line numbers onto the program. (PIP's numbers start at 1 and increment by ones which leaves you no room for modifications later on. MBASIC's RENUM numbers have intervals of 10 between them.) This RENUM also strips off all the leading zeros and automatically changes the internal line number references. Tell the program to RUN and, provided your program logic is valid, it should execute. If you find that debugging is necessary, and it often is, now is time enough to grind away using MBASIC's limited line editing facilities and required line number entries.

Finally use MBASIC's SAVE command to file the program once more, with the neat, new line numbers. If this is your final, *final* version you can go ahead and use a regular save command. But if you will want to massage the program again using WordStar, SAVE it with the "A" option (as an ASCII file). Of course, if this is a module of a greater program yet to be assembled,

definitely save it in ASCII format so that it can later be merged.

As an optional final touch, if you want to close up the spaces between the new line numbers and the actual lines, use WordStar to run an automatic find and replace operation. For find, enter a TAB (by pressing the TAB key once). For replace with, enter a space or two. Use the global repeating options of the **QA** command and the tabs will be removed in a jiffy. (But programs run fine if you leave the tabs in.)

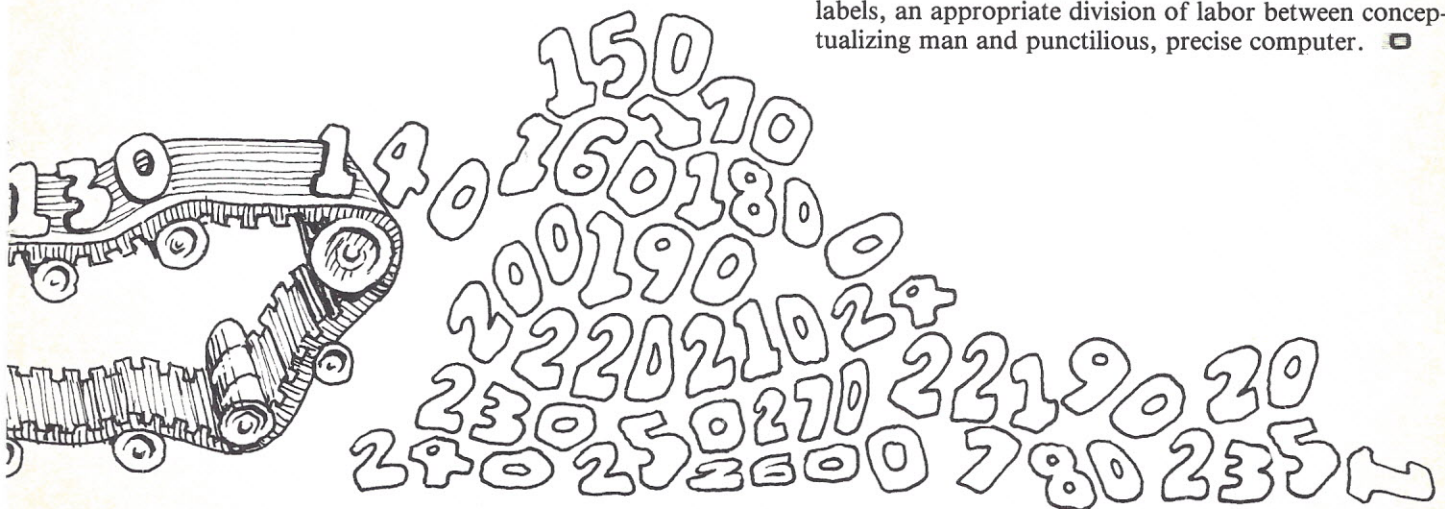
Once More, With Feeling

To recapitulate the entire procedure:

1. Draft your program as a Non-document file using WordStar's "N" option.
2. Omitting line numbers, translate your program in to precise MBASIC syntax and vocabulary. Use labels/titles in place of line number references.
3. PIP the program (or section thereof) using PIP's [N2] parameter. This installs six-digit line numbers.
4. Note which line numbers have been assigned to the subroutines and code sequences referred to internally. Use WordStar again to automatically find and replace label references with line numbers.
5. Use MBASIC's RENUM command to replace the PIP-installed line numbers.

The benefits of this procedure include access to WordStar's power and flexibility, while initially drafting and refining a program. It goes much faster than keying in by MBASIC and editing on only one line at a time. Also, you are freed from the tyranny of MBASIC's line numbers, at least while doing the actual writing. The procedure is even useful when copying big blobs of code, say from a magazine article, if you want to avoid typing the line numbers.

Of course, if you are writing a very small program you probably won't want to bother switching back and forth from WordStar to PIP to MBASIC. But for any serious work you can change from chipping away at stone to shaping and molding clay in the initial stages. Only when the form is set, do you firm it up into the rigid shape required by MBASIC. Best of all, you let the Osborne 1 handle the numbers while you deal in concepts and labels, an appropriate division of labor between conceptualizing man and punctilious, precise computer. ■



I/O, I/O, It's Off To Work We Go...

Editor's Note: This article is the first in a series on interfacing other devices with the Osborne 1 computer. This issue we'll look at serial communications, while in subsequent issues we'll examine parallel, IEEE, and software protocols.

Much of the information here is technical and may confuse the novice reader. Nonetheless, the intent here is to fully describe RS232 and its development. As you become more comfortable with computer terminology you might want to refer back to this article and increase your understanding.

On a more practical vein, each article in this series will feature an "application note" describing how to implement the theory discussed with a printer connected to the Osborne. This month's printer hookup description is for the Diablo 630, a popular letter-quality printer (see page 56).

Part One: The RS32 Interface and Serial Data Transfer

by Brad Baldwin

The need to standardize wiring and signals is similar to the need to standardize the electrical connectors, plugs, and outlets in your home. Toasters, TV sets, lamps, and fans all use the same type plug and socket. Imagine what it would be like if every home appliance manufacturer used their own plug system!

To standardize how various types of computers, modems, printers, and other business machines are connected, the Electronic Industries Association (EIA) developed an interface standard—called RS232—around which business equipment manufacturers could design their product. The current version of the popular interface—the one in your Osborne 1—is officially known as the EIA RS232C standard.

The RS232 cable and connector were designed such that one computer or business machine could attach to a completely different business machine. Before standardizing, manufacturers designed their own systems; logic levels, timing parameters, and control codes are often unique not only from one manufacturer to the next, but sometimes within the same company.

Background and History of Development

The first RS232 interface was developed in the early 1960's. Seven interchange circuits were defined and the maximum open-circuit voltage was specified as 50 volts to ground. The maximum current flow was not to exceed 1/2 amp. The OFF, or "low" condition, for a signal line was defined as less than three volts, while the active or "high" condition for a signal line was defined as greater than plus three volts. Allowing business machines and modems to be plug compatible was the intent of the standards.

The first RS232 specification did not go far enough. Therefore, RS232A was adopted as the new recommended standard in 1963. This interface established a

Figure 1

EIA RS232A, developed in 1963:

PIN	CIRCUIT	DESCRIPTION
1	AA	Protective Ground
2	BA	Transmitted Data
3	BB	Received Data
4	CA	Request-To-Send
5	CB	Clear-To-Send
6	CC	Data Set Ready
7	AB	Signal Ground
8	CF	Data Carrier Detector
(9, 10, 15, 17)		Various lines not utilized by the Osborne 1
20	CD	Data Terminal Ready
(22, 24)		Additional lines not implemented.

fixed relationship between a specific circuit and a specific pin number. It also defined signal voltage levels as -3 to -25 volts to represent the OFF state and $+3$ to $+25$ to represent the ON condition.

The accompanying chart shows what those standards were. The first RS232 standard defined just the seven top lines. RS232A not only further defined these, but also assigned pin numbers on a standard 25-pin connector. Additional circuits were defined for optional usage.

Coding: "X" stands for any alphabetic character.
 Ground lines are: A"X"
 Data lines are: B"X"
 Control lines are: C"X"
 Timing lines are: D"X"

In 1965, the RS232B standard was released. It provided for two additional specifications. The first change was that the terminating impedance at the receiving end of an interchange circuit was not to have a DC resistance of less than 3000 ohms or more than 7000 ohms. This helped engineers design interface circuits with better reliability.

The second (optional) change permits tying together frame ground and signal ground (data set). When used, a definite signal reference is established between equipment, i.e., between computer and printer.

Today's present standard RS232C was released in 1969. It further clarified circuit definitions and stated that when properly terminated, the voltage should not exceed plus or minus 25 volts and preferably would not

be greater than plus or minus 15 volts. It should be noted that the phrase "standard RS232C" is anything but! Despite the standardization, the RS232 connector has been called the most abused connector in interfacing.

The following chart shows the direction of the interface circuits. A little more background information is needed here before going further.

DTE stands for Data Terminal Equipment and DCE stands for Data Communications Equipment; the Osborne 1 is considered to be a DCE device. RS232 signals were designed with a common point of reference, which happens to be the DTE device. The transmitted data line on the Osborne 1 is actually physically receiving data; however, recall that the Osborne 1 is a DCE device and that signal definitions reference the DTE device. The Osborne 1 received data pin is actually transmitting data, because—once again—the signal definition references the DTE device. These and other signal directions are made more clear in the accompanying diagram.

The sequence of operation for transmitting data is as follows:

Signal Description	Sending Device
1) Data Terminal Ready	Printer
2) Data Set Ready	Osborne
3) Request-To-Send	Printer
4) Clear-To-Send	Osborne
5) Transmitted Data	Printer

Figure 2

Osborne 1 (DCE)		Printer (or other DTE)	
Ground	1	—	1
Transmitted Data	2	—	2
Received Data	3	—	3
Request To Send	4	—	4
Clear To Send	5	—	5
Data Set Ready	6	—	6
Signal Ground	7	—	7
Rec Line Signal Detect	8	—	8
		—	11 Secondary Req to Send
		—	19 Secondary Req to Send
Data Terminal Ready	20	—	20

Pin 11 or 19 are secondary, or reverse channel lines, which will be explained later.

The sequence of operations for receiving becomes:

- | | |
|------------------------|---------|
| 1) Data Terminal Ready | Printer |
| 2) Data Set Ready | Osborne |
| 3) Data Carrier Detect | Osborne |
| 4) Received Data | Osborne |

Now, let's try to make some sense from these strange and confusing terms and apply it to everyday use. The printer is the most commonly interfaced device using RS232, so we'll use that in our examples.

Transmitting Sequence of Events

1) The Data Terminal Ready signal is sent from the printer (or other DTE device) to the computer, indicating that the printer is powered up. In other words, the line goes high (ON or positive voltage) when power is supplied to the printer, no errors are detected, and the printer is "on line."

2) The Data Set Ready line is sent to the printer from the Osborne and indicates that it also is ON. When power is ON to the Osborne, this line is always "high". (We assume the computer is ready if it is on.)

3) The Request-To-Send signal is sent from the printer and goes high (ON) when the printer's Data Terminal Ready is ON and when the computer has responded with Data Set Ready. It indicates to the sending host (the Osborne 1) that the printer is ready to receive data.

4) Clear-To-Send is sent to the printer and indicates it is ready to transmit. This line is held continuously high when power to the Osborne 1 is ON.

5) Transmitted Data is data transmitted from an external device, such as a printer, to the Osborne 1.

Receiving Sequence of Events

1 & 2) Data Terminal Ready and Data Set Ready were already explained.

3) Received Line Signal Detector (or Data Carrier Detector) is sent to the printer, indicating that the computer is receiving a signal above a preset level. When the signal drops below this level it goes OFF and stops the flow of information to the printer. On the Osborne, this line is continuously high when the power is ON.

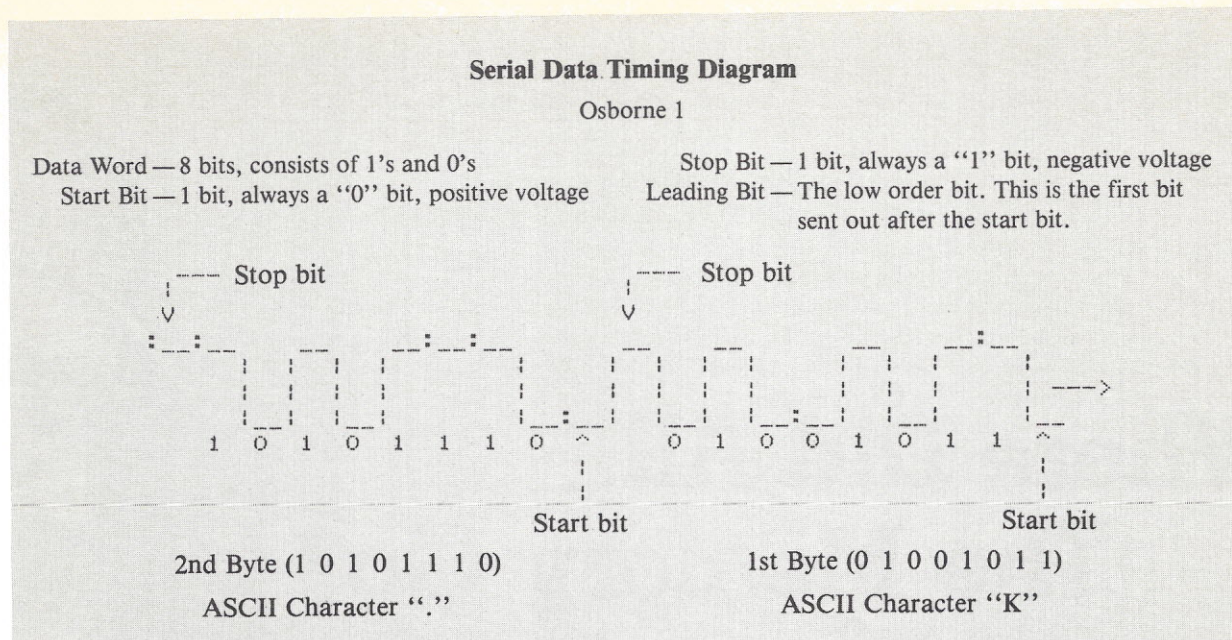
4) The Received Data signal is serial data SENT TO THE PRINTER. The computer sends data to the printer in the form of binary 1's and 0's or negative and positive voltages respectively. (More on this later.) Recall that the Osborne's "receive data" line actually sends data due to DTE referencing.

Secondary Channels

A very important optional line that should be discussed is the Reverse Channel or Secondary Request to Send line. It is also commonly referred to as the "hardware handshaking" line. This is a communication channel from the printer to the Osborne 1 and becomes active and stops the flow of data when:

- 1) The printer's buffer is about 7/8 full.
- 2) Paper is out.
- 3) Ribbon is at its end.

Figure 3



4) The cover is open.

5) Any other "check" condition.

On most printers, this line is either pin 11 or 19. As you might guess The Reverse Line is important because it keeps the printer's buffer from overflowing, and offers an alternative to specifying a particular communications protocol. These are concepts that will be dealt with more fully in following articles in this series.

Serial Data Transfer

This section devotes itself to data and data transfer.

Data in the Osborne 1 can be WordStar text, MBASIC programs, data files, or any other organized set of instructions. All data in all computers are binary values; 1's and 0's. This makes it easy for the computer to send information because the signal representing the data is either ON or OFF. If multiple states were used—such as no voltage, a little voltage, medium voltage and so on, up to full voltage—it would be possible due to power fluctuations that "medium" would become "a little" voltage. In other words, 5 volts could temporarily drop to 4 volts and therefore look like a different data character.

How, then, is RS232 data sent? Data is sent over a line one bit after another when in the serial mode. Each bit is sent at a timed rate (the baud rate) and the receiving device (another computer or a printer) examines the data line at the appropriate times to gather and assemble the data.

Data is sent from the Osborne 1 in a ten-bit string. The first bit is always a single logic "0" data bit, and is termed the "start bit." In order for the printer to receive the data bits properly, the computer and the

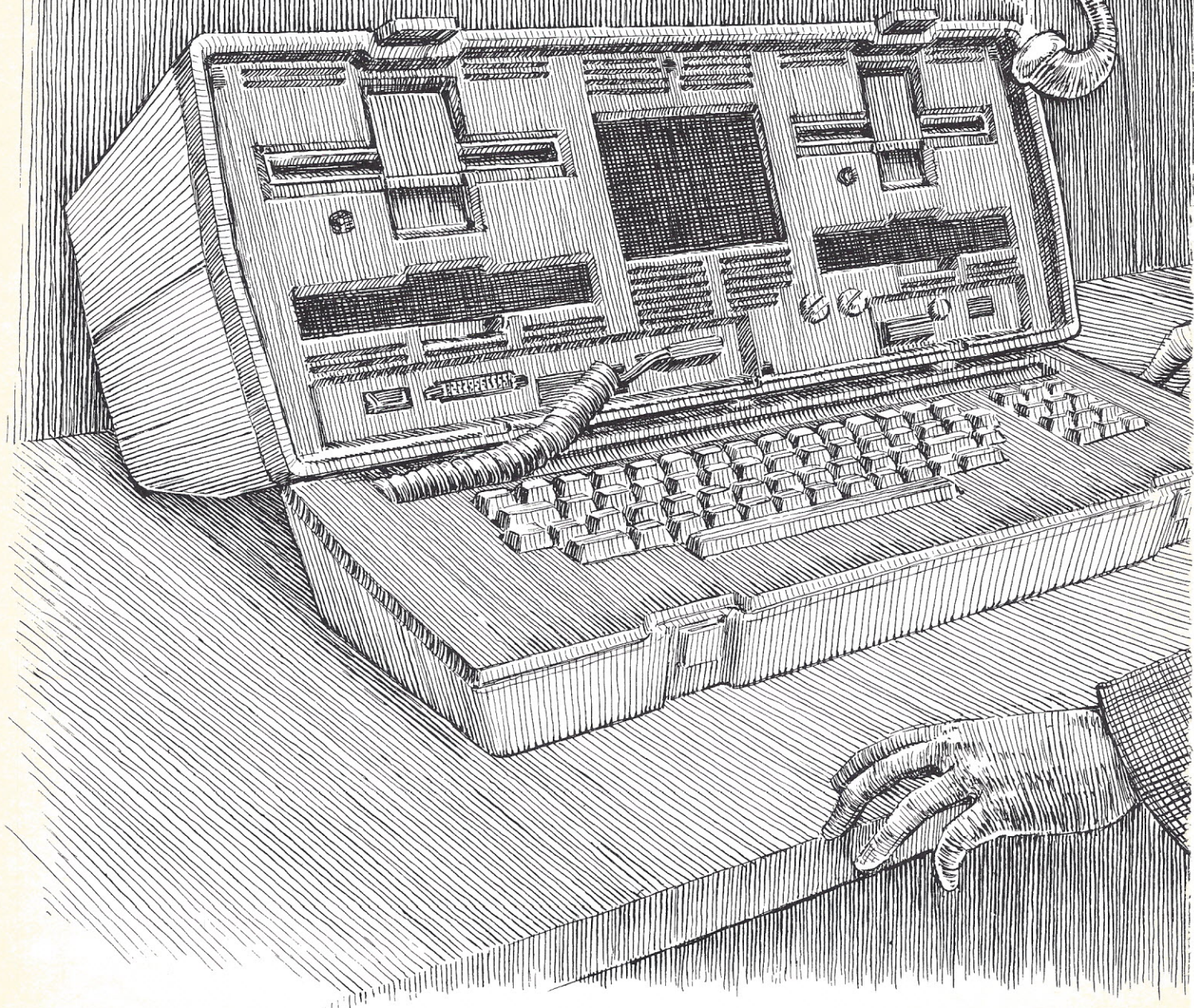
printer are both set for the same baud rate. The baud rate is how many bits are sent per second. After the printer receives the start bit, it examines the data line coming from the host at the established baud rate. As mentioned, the printer takes in the data as a binary "0" or a "1". The printer examines the data line expecting to receive eight data bits; however, bit #8, the high order bit, is usually ignored. The remaining seven data bits are assumed to be the coded ASCII character that the host wanted transmitted to the printer.

Transmissions end with a logic "1" bit called the "stop bit." The stop bit level is maintained until the next character is ready to be transmitted. Hence, the start and stop bits are used to synchronize the receiving unit (perhaps a printer) with the sending unit. When bits of a character travel in sequence as explained above, it is called "serial transmission." With the start and stop bits added, it is called asynchronous transmission because every character must be monitored, or individually synchronized.

The Osborne 1 sends out 8-bit data words with 1 start bit and 1 stop bit; therefore, the Osborne 1 uses asynchronous transmission. Synchronous transmission is more complex and requires expensive equipment, but allows more information to be transferred per second because the line is so cluttered up with start and stop bits. For example, if it took 21 seconds to send out information asynchronously, it would take 15 seconds to send it out synchronously. The main disadvantage to serial synchronous transmission is that data can be lost if the sending and receiving units become unsynched.

Next issue we'll examine parallel data transmission. □

Where Did All The Memory Go?





by Jim Jett

I recently bought my Osborne 1 to do word-processing. My first project was to rewrite a 100,000 word fiction manuscript. I made assumptions about the disk storage capacity that led me astray and eventually to a full-scale investigation.

The long-established way of word-counting for manuscripts has been to assume five letters to each word and 250 words to each page. I had often read that one byte was enough for one character and that a 102K disk would store about thirty single-spaced pages of text. This sounded as if I could save my manuscript on seven disks with lots of room to spare. NOT SO, OF COURSE.

BAUMGARTNER

The rest of this article chronicles some experiments that led to some conclusions. I will present two of the conclusions now:

1. Somewhere between Hayward and my home in Dana Point, California, a Pac-Man clone sneaked into my Osborne. He, or she, is probably hiding in the "boot." Each time I save a file the clone zips into the drive and eats up memory space.
2. I am about to look up in supplication to the Great Computer Engineer in the Sky and ask that He lower down a 10M hard-disk drive—or at the very least that He help Adam O. get the Double Density upgrade on the market.

Now to the experiments. . . The Osborne Manual told me that the 102K the retail store advertised was really 92K of formatted data storage space. I loaded WordStar and inserted a freshly-formatted diskette in Drive B. Before I logged to that drive, I queried Disk A with an R and then **XDIRRETURN**. The space left was 2K. Hastily I pushed any key followed by L and then **B:RETURN**. I queried the disk. It said that 2K had been used and 90K were left. I had lost 2K without saving a single word. Space of 90K seemed like a lot. The 2K blocks worried me.

I pushed any key again and then D, then named my new file HUHQUERY (? is illegal in a filename). The text of my file was:

*You'll wonder where the memory went,
When you save your file with good intent.*

XDIR said I had used 2K and had 88K left. I resaved my file to create HUHQUERY.BAK. That used another 2K. Using Y I deleted both files.

To prove my suspicion by using *reductio ad absurdum* that no file could ever use less than 2K, I saved a series of files named ALPHABET.001, ALHABET.002, ALPHABET.003, and so on.

The texts of these files were single letters, in alphabetical order. I did not, of course, make and save 52 files for both upper and lower case. That would be silly. The diskette only holds 26 upper case letters and 19 lower case letters for a total of 45 (letters and files)!

Next I tried one manuscript page with default settings, except for double-spacing. It used 2K to store 250 words.

The same file single-spaced used 4K! This was before I suspected the existence of the clone.

A file with a little less than four pages with default settings except for .PL51(not 66) used 4K. Another files with the same format but slightly over three pages used another 4K. Checking to see that neither drive was active, I removed the diskettes and turned the Osborne 1 off. I drove to the retail store and bought another ten diskettes. I could forsee having to buy 100 at a time.

Upon return and after firing up in the proper sequence I decided to stretch WordStar to its limits by employing *expandio ad absurdum*. Top and bottom margins were zero (MT0 and MB0). Left and right margins were 1 and 79 (^OL1 and ^OR79). Page length was set at 66. Then I held the Z key down for a long time. It made me a little sleepy (file name ZZZ). When the screen was full of Zs (about 5280 of them), this one page, with no paragraphs, punctuation, spaces, etc., used 6K of storage. I suspect the unused portion of the 3rd 2K block still had room for another 864 Zs.

At one extreme were 45 files each with one letter. At

the other was potential for storing maybe 92,160 Zs. Neither were of any use. We all know the alphabet and who wants that many Zs.

Something was gobbling up spaces, and probably carriage returns. *The Clone!* I had smoked him out in file ZZZ by space-starving him. He must have ran back to ROM, of course. It was considerate of him to spare the letters, numbers, and punctuation.

The preceding is a trifle tongue-in-cheek. I did go on to find that with ordinary text at default settings, one 2K block holds 34.25 lines and my available 90K of space could store 28.02272727 pages. No blank spaces, no long top or bottom margins, no .BAK files. . . You could probably get 20 useful pages on a diskette.

Real engineers design and build to "worst case" specifications. Advertising "engineers" try to sell with "best case" claims—plus 5 to 10%!

Buy a car with an advertised 250 horsepower engine. Balance, port, polish, and fine-tune it on a dynamometer. You will be lucky to get an honest 185 b.h.p. The advertising "engineer" isn't really lying. He's talking about a horse of another power.

My letter-quality printer was advertised as a "200 word per minute" machine. The manual said: Print speed 16 characters per second (Shannon text, pica pitch). That is 960 makers and spaces per minute. Two hundred useful words? NO WAY. It won't do even 192.

You, nor I, nor anyone else will ever get 30 pages of useful text on one 5¼ inch single density disk. You might spend some time trying to approach that ideal. I am. . .

Mr. Jett's calculations regarding the storage capacity of a single density Osborne 1 are correct. Because of the way in which CP/M works, the minimum amount of space that can be allocated to a file is 2K. This means that the maximum number of files on an Osborne single density diskette is 45. I'm not sure what Mr. Jett's typical document looked like, but ours resulted in getting 30 pages onto one diskette; his calculation of 28.02272727 is close enough for me. Realistically, you should never attempt to store a document longer than half the capacity of the diskette, resulting in a practical upper limit of 15 single-spaced pages.

The discrepancies Mr. Jett points out regarding spaces taking up more space than they deserve are due to the justification that WordStar normally performs on documents.

Double density owners will find the numbers listed quite different. We've changed the minimum size of a file to 1K, meaning more files can be stored on a diskette. The upper limit for a single file is closer to 30 pages of text.

As for printers, Diablo says my 630 printer runs at 45 characters per second. Guess what? It does; in fact, in one test I made (using a lot of tabs), it ran 53. On the other hand, another printer I own claimed it ran at 160 cps. Guess what? It ran only 55—I guess it didn't want to break the speed limit.

The point of Mr. Jett's article and my elaboration on it is simple: advertising claims notwithstanding, it pays to carefully examine and understand the parameters you are working with. Every piece of computer equipment has its limits, and I hope this article helps you understand those of the Osborne—th

Two-and-a-half Utilities for dBASE II

by Willis Grant

(Editor's note: starting next issue we'll feature a regular column for dBASE II users, called dBASICS. Since so many of you Osborne 1 owners are discovering the power of dBASE, we're offering these two small morsels to whet your appetite prior to our column's appearance.)

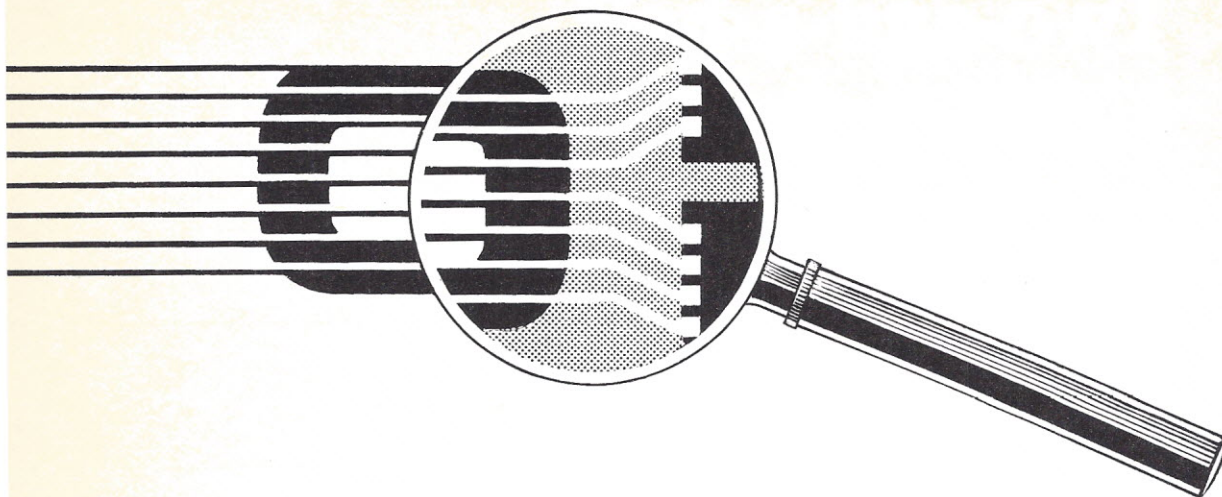
The following two dBASE II program examples allow you to get into dBASE II quickly, the second one without having to type a date. The first uses a default date saved in a file named DAT.DBF (this file has one entry in one field defined as: DA,C,8). The second method allows you to skip entering a date entirely. Either program is invoked by typing DO IT.

```
*IT  SETS UP dBASE FOR B: DISK OPERATION
SET TALK OFF
ERASE
USE DAT
STORE DA TO DAX
@ 5,5 SAY 'ENTER DATE IN FORM OF MM/DD/YY'  'GET DAX PICTURE 'XX/XX/XX'
READ
SET DATE TO &DAX
REPL DA WITH DAX
USE
SET DEFAULT TO B
@ 10,5 SAY 'DEFAULT SET TO B ... GO TO IT'
SET TALK ON
@ 12,0
```

```
*IT  SETS UP dBASE FOR B DISK OPERATION, NO DATE ENTRY
SET TALK OFF
ERASE
USE DAT
STORE DA TO DA
SET DATE TO &DA
USE
@ 8,5 SAY 'DATE IS SET TO 'GET DA
SET DEFAULT TO B
@ 10,5 SAY 'DEFAULT SET TO B ... GOT TO IT'
SET TALK ON
@ 12,0
```

The following program protects you from destroying data when modifying .DBF file structures. To use it, type DO A:SWITCH.

```
*SWITCH
ERASE
@ 4,0
? 'THIS PROGRAM MODIFIES STRUCTURE OF A DBF FILE'
? 'AND RESTORES DATA.'
?
ACCEPT 'DBF FILE TO BE CHANGED? 'TO OBJ
USE &OBJ
COPY TO &OBJ.Z
MODI STRU
APPEND FROM &OBJ.Z
USE
USE &OBJ
ERASE
@ 10,0 SAY 'MODIFICATION COMPLETED. YOU ARE NOW USING &OBJ'
? 'YOUR ORIGINAL FILE AND STRUCTURE IS SAVED AS &OBJ.Z'
```

We're Teaching the World to use Microcomputers

by Daniel D. Montague, Jr.

While reading the March '81 issue of "Microcomputing Magazine" I noticed an advertisement for the Osborne 1 computer. At the time, I was just completing assembly of my Heath/Zenith 89 and becoming more deeply involved in using a microcomputer for small business applications, as a hobbyist, and for educational purposes. Once I completed my H/Z 89 and began to use it for accounting, billing, and inventory control in my exterminating business, I gradually developed a fascination with small computers.

My curiosity peaked after seeing the Osborne 1 displayed at The Xerox Store in Fort Lauderdale, FL, during their grand opening in August. Realizing the Osborne is an exceptionally good value for the price, I decided to purchase one—planning to use it for business and pleasure, as well as thinking it would make a valuable contribution to my daughter's education. I especially liked the portability factor since I could easily carry the Osborne around with me as I traveled about checking job sites.

I began to envision the many uses I could find for it

from scheduling appointments and developing mailing lists, to keeping track of chemicals used in my business. I became intrigued with sending and receiving messages electronically, getting the latest stock quotes and checking airline schedules via "The Source." It didn't take long before I was the envy of my friends and business associates, many of whom were also looking at ways to use microcomputers to streamline and economize their own businesses.

After owning the Osborne for several months, I offered to help my children's school with a fund-raising effort that had been undertaken. Although the school's staff was immensely pleased that they could take advantage of word processing with the Osborne, it quickly became evident that they found the sophistication inherent in WordStar to be a limitation to their usage.

Finding that I was spending more and more time dropping by to give instructions on various tasks such as setting up form letters, merging names and addresses, creating files and making revisions to text, I decided that an easier method for people working on the project to

We began kicking ideas around and it became more and more apparent that the taped instructions had a lot of merit—with huge potential for financial success!

was to listen to a set of step-by-step instructions that I recorded out of desperation.

No longer was it necessary for me to stop by the school daily to check their progress or receive innumerable telephone calls from project workers to answer inane questions, many of which had been answered several times before.

During one of my routine visits to The Xerox Store around the Christmas holidays, I discussed my idea of the taped instructions with a saleswoman, Nancy Riley. She very quickly saw the marketing potential in terms of helping customers who require a "quick start" after purchasing a computer system. In addition, she recognized an entirely different application—one which would benefit sales representatives by assisting them in rapidly learning something about the many different hardware systems and software programs they need to become familiar with in the everchanging marketplace. In short, Nancy saw the training tapes' benefit to salespeople as well as customers as a way to make their respective tasks easier.

We began kicking ideas around and it became more and more apparent that the taped instructions had a lot of merit—with huge potential for financial success! While I opened an office in my garage, Nancy and I worked together through her connections with various top level executives at Xerox Corporation's headquarters in Stamford, Connecticut, and with personnel in their offices located in California and Virginia.

Sample tapes we developed were reviewed and evaluated as items to be sold at The Xerox Stores nationwide and utilized by store representatives for their own training. In March we moved into our present suite of offices, redesigned our packaging and sales literature, began a vigorous advertising campaign, and revamped our pricing structure. We created a unique identity very quickly by using the "MICRO" colors of process blue and yellow, which ties together all of our product literature, packaging, national advertising, and dealer packs. Even our office stationary matches. Everyone, including the postman, has commented on the "distinctive look" we achieved and the image we created.

Xerox' opinion of the tapes was such that they placed a large order for our Xerox 820 and Osborne 1 series a short time later. As a means of preempting competition, we purchased several other computers including Apple II+, Xerox 820, IBM PC and Atari. Using the same theme, we developed audio instructional cassettes for the operating systems of these other computers in addition to producing learning programs for some of the best selling software on the market... programs like MicroPro's WordStar, CalcStar and SuperSort; Sorcim's SuperCalc; Ashton Tate's dBase II; and VisiCorp's VisiCalc. Additionally, we developed instructional tapes for other popular software programs which are widely used in business today.

Nancy ultimately assumed the presidency of MICRO Instructional, Inc. We have subsequently grown to an organization of eight fulltime sales, administrative, and technical employees, with several part-timers in less than six months. Lenny Bayer, another former Xerox sales representative recently joined us as director of operations. "I stay in my back office and generate products and ideas," says Montague. Nancy deals with vendors, customers, retailers and distributors who have learned that giving her a price only means they have something to sell. "She has become so adept at handling the purse strings," states Montague dryly, "that on one occasion I added several boxes of #2 pencils to a supply order and the clerk called her back for approval."

Our company, Micro Instructional, Inc., advertises nationally in half a dozen or so top-flight computer publications and is projecting sales of \$1.5 million by the end of our first fiscal year 1983. We firmly believe we will be established as a multimillion dollar corporation in less than two years based on our rapid growth to date in the exciting and explosive field of microcomputers.

In summary, the point of my story is to encourage people who have an interest in learning about microcomputers or acquiring one for business or home use to do so—they'll never know where it can lead them until they try! We took a "simple idea" and now regularly work 12-16 hour days trying to keep up with the demand for our products!



Random Tracks

WordStar With the Centronics 739

by David Price

Though the Centronics 739 printer seems to live in the shadow of the ubiquitous Epson, its proportional mode gives characters that are only a notch below typewriter quality. WordStar users can take advantage of this feature quite easily. The required patches are listed below.

BLDSTR: 01	ROLDOW: 02 1B 1C
PBACKS: 02 08 0C	PSINIT: 03 1B 11 0D
PALT: 02 1B 0E	USR1: 01 0E
PSTD: 02 1B 0F	USR2: 01 0F
ROLUP: 02 1B 1E	

Appendix 1 of the Osborne reference guide discusses the procedure for making WordStar patches with INSTALL. When you run INSTALL, you will be asked to specify the type of printer you are using. For the Centronics, reply with option C—a Teletype-like printer that can backspace.

Owing to some quirks of the Centronics, a few words of explanation are in order. BLDSTR is set to 1 so that text marked for boldface will not be overprinted. Since each character has a different size in proportional mode, backspacing does not register the printhead with the previous character. For that reason, overprinting usually creates a blur. PALT and PSTD are redefined so that WordStar's pitch controls can be used to switch between normal print and elongated print. ROLUP and ROLDOW are redefined to allow superscripts and subscripts, PSINIT contains the character sequence that initializes the Centronics for proportional printing. USR1 and USR2 define two of WordStar's printer controls to take advantage of the 739's "fast underline" feature. When fast underlining is enabled, the Centronics prints an underline on the fly, with no need for backspacing.

After these patches are made, the following printer control functions are operative:

- ~ PA—begin elongated print
- ~ PN—end elongated print
- ~ PT—superscript begin/end
- ~ PV—subscript begin/end
- ~ PW—begin fast underline
- ~ PQ—end fast underline
- ~ PS—standard underline begin/end

Since I like to see all of my text onscreen, I keep my display margin set at 52. The line-forming facility of MailMerge then lets me expand the margins at print time. I keep a pair of files on my WordStar disk to save the trouble of retyping dot commands. One of the files contains dot commands for a manuscript with page numbers. The other contains dot commands for a letter. As you can see from the listing, I have chosen to put about 90 proportional characters on each line.

To print a document, I use the merge-print command and supply the name of the appropriate command file. Both files include dot commands that request the name of a text file and then retrieve the file from Drive B. With all those dot commands encapsulated in a separate file, I can devote my precious user-defined keys to other purposes.

Osborne SuperCalc User Report

(Editor's note: We recently received the following notice from Sorcim, the creators of SuperCalc.)

Dear Sirs:

The problem with totals of numbers not equaling the total of the displayed numbers is a display problem. The problem behaves like this:

Say that you have a row of numbers. Some of these numbers were arrived at by calculations; particularly dividing or multiplying by a fraction (ex: 0.0075). This results in a number with more than two significant decimal places (1.656). If the column or range of cells is formatted to display as Integer or \$ (dollar) format then the display only is rounded to the fixed number of decimal places.

Example:

Display	Actual Valued Stored
---------	-------------------------

1.66	1.656
------	-------

As can be seen, when adding the stored value to another similar value, the result may not equal the total of displayed values.

The way to avoid this is to place a formula in the cells that generate the extra precision (as with a divide) to force the actual value to be rounded to 2 places (\$ format).

Example:

- A1/A2 produces more precision than 2 digits.

- Enter in the cell instead of A1/A2 the following:

$\text{INT}((A1/A2)*10-0+.5)/100$

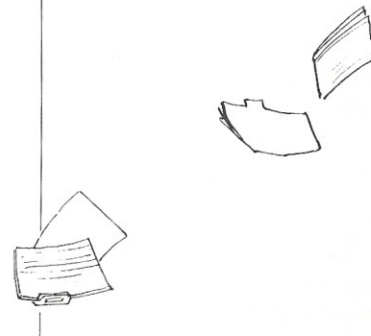
Any formula could be placed in the innermost pair of parenthesis where the A1/A2 is located.

The best way to proceed, when making the template (blank worksheet), is to set the format to G for General so that you can see all the places where the extended precision is generated. Then place the rounding formula into these cells with the formula already there. When you are satisfied that you have gotten all the places where the extended precision is generated, set the format to dollar (\$) format or leave it General, if you like.

Chris Illes

Sorcim

Customer Support



Transferring Files Between Osbornes

This is a brief description on how to transfer non-COM type files between two Osborne computers using the PIP command instead of communications software.

A null modem cable is connected between the two Osbornes. For those who don't know what a null modem cable looks like, here is how to make one:

RS232	RS232
<u>CONNECTOR 1</u>	<u>CONNECTOR 2</u>

pin 1 -----	pin 1
2 -----	3
3 -----	2
7 -----	7

Use the STAT and PIP commands to transfer your files. Only text files can be transferred, as the high-order bit (8th bit) is stripped (removed) from all files during the PIPing process. Step 1 is to type the following on the SENDING Osborne:

A STAT PUN:=PTP: RETURN

Step 2 is to type the following on the RECEIVING Osborne:

A STAT RDR:=PTR: RETURN

You're now ready to PIP the files. The receiving Osborne enters its PIP command first:

A PIP d:filename.typ=RDR:[E] RETURN

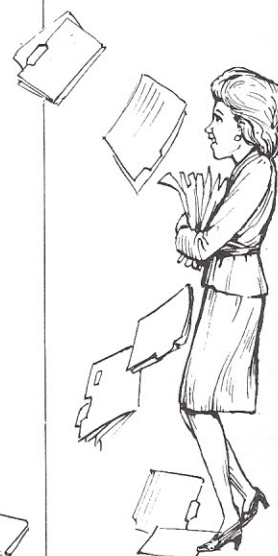
This sets the computer up to receive information without loss from the sending unit; the [E] tells PIP to echo all transfers to the screen so you can see what is going on.

Now type the following on the sending Osborne:

A PIP PUN:=d:filename.typ[E] RETURN

In the above examples, "d:filename.typ" should be substituted with the drive, file name, and file type you wish to transfer.

OCC Technical Support Staff



Forgot To Log Drive B

One human error that's always happening around here is the one where you forget to log onto drive B and inadvertently create a file on the WordStar diskette in Drive A. Besides XDIR, this is the quickest way to find out how little room is left on the WordStar diskette. If you happen to perform this misdeed do not panic, just block the file and write it over to Drive B. In other words, place the cursor at the beginning of the file and type >KB, next move the cursor to the end of the file with >QC and type >KK to block the contents of the file. To transfer the file, type >KW and supply the desired file name prefaced by B: and press RETURN. Abandon editing of the file you opened on Drive B to see that your file is in the directory of drive B.

Connecting the Diablo 630 Printer

by Brad Baldwin

The Diablo 630 received more interfacing questions than any other printer. This article suggests two ways to run that printer; however, the Diablo owner should realize that there may be other possibilities in interfacing this popular printer to the Osborne.

In any printer installation, the major questions usually focus on the following concerns:

- 1) What protocol is specified?
- 2) Under WordStar, how is INSTALL used?
- 3) How are the DIP switches set?
- 4) What is the cable configuration?

To make matters difficult, most Diablo 630s have a component called the HPRO5 board. This board contains two ROMs, which, if not already missing, should be removed. They provide proportional spacing, auto justification, auto underlining, and other intelligent features that interferes with the already intelligent WordStar. Diablo engineers are aware of the problem between WordStar and their ROMs and are presently seeking a fix. The user or dealer may remove those ROMs without worry of voiding the warranty. The two ROMs are in board locations F23 and F32.

The HPRO5 board also contains a jumper block that enables automatic hardware "handshaking" (Data Terminal Ready ties in with Printer Ready). This jumper is performed across pins 5 & 6 on the A60 connector on the HPRO5 board.

There are at least two options in running the Diablo 630. Option 1 uses hardware handshaking and the serial SETUP configuration, the other uses XON/XOFF protocol. This article contains instructions on both of those options. Use it as a reference point for other applications; then you will have at least two known ways of running the printer to fall back on.

Option 2 allows super- and subscripting, and micro justification (not to be confused with proportional spacing) to be performed.

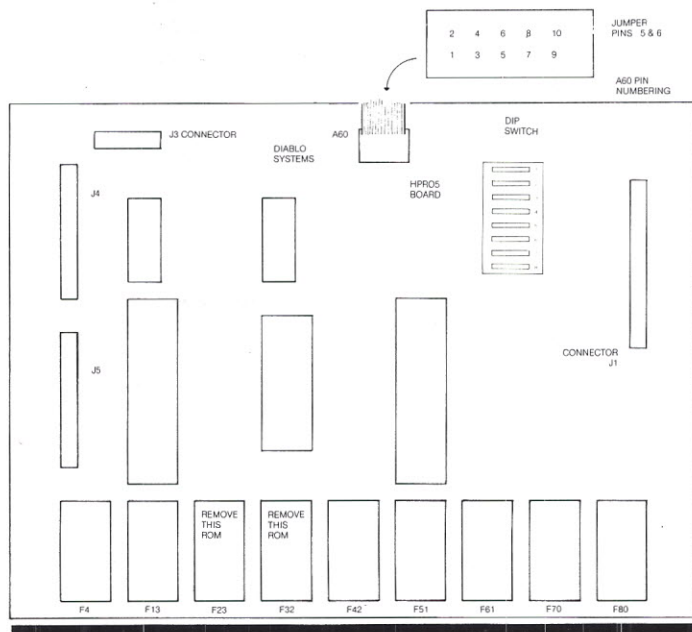
Osborne	OPTION 1	OPTION 2
SETUP Utility		
Baud Rate	1200	1200
Protocol	Serial	XON/XOFF
WS INSTALL	no changes	Diablo 1640, 1650
ROM Rev	1.2, 1.3	1.2 with Bios Patch, 1.3

The ROM Rev# refers to the Osborne 1 monitor ROM Revised Level number. 1.2 Rev machines need a BIOS patch (available from the dealer) in order to utilize XON/X-OFF or ETX/ACK protocol.

The internal A60 jumper on the Diablo enables the Data Terminal Ready interface line to duplicate the Printer Ready interface signal, creating the necessary handshaking protocol. In either case, the RS232 cable used is "off the shelf" standard:

Osborne	1	2	3	4	5	6	7	8	20
	:	:	:	:	:	:	:	:	:
Diablo	1	2	3	4	5	6	7	8	20

Pin 7 should serve as the signal ground return (the bare wire) for use in shielded cables.



DIABLO 630/HPRO5 BOARD
MAJOR COMPONENT LANDMARKS

Operator Control Panel DIP Switches			
Left-Hand DIP Switch		Right-Hand DIP Switch	
1	OFF (Double L.F.)	1	OFF (Half-Duplex ASCII)
2	OFF N/A	2	OFF (Parity)
3	OFF (Auto L.F.)	3	OFF (3 & 5 enable)
4	OFF N/A	4	OFF 1200 Baud)
5	OFF (Uppercase)	5	ON
6	OFF N/A	6	OFF (Even/Odd Parity)
7	OFF (Message)	7	OFF (Paper Out)
8	OFF N/A	8	OFF (N/A)
HPRO5 Dip Switch			
All ON except 7 & 8.			

Some of the above settings are not the only possible choice; your particular application may require something different. Other switches, while listed as ON or OFF, may be totally irrelevant to the operation of the printer.

Performing the Modifications

Use the Osborne configuration program called SETUP to configure your diskette for the necessary baud rate (1200) and printer protocol (serial or XON/XOFF). Your Osborne User's Reference Guide has information on how to use SETUP in sections titled "Setting Up" and "Modifying WordStar on the Osborne 1."

WordStar's INSTALL program is used to configure WordStar if you plan on using Option 2. The "Modifying WordStar" article in the User's Manual also contains information on how to use INSTALL. The Diablo 1640/1650 option is item "E" on INSTALL's printer menu, and should be used by Diablo 630 owners.

That's all there is to it!



A Primer on Hex and ASCII

Computer Terminology Explained

by Tom Vyse

Inside a computer every piece of information is stored as numbers. Sometimes these numbers represent instructions to the computer. Sometimes they represent letters, characters, or "control" codes, like ESCAPE or Control C.

Frequently the numbers that represent instructions are unique to a specific "processor." These are not at all standardized. Fortunately the situation involving letters, characters, and control codes is more evolved. These are the means that one computer has to talk to another, and, to a large degree, these have been standardized.

The standard which is almost universally used for one-to-one correspondence between characters and numbers inside a microcomputer is called the "ASCII" standard. ASCII stands for "American Standard Code for Information Interchange." There are other standards, including one for IBM machines which is called EBCDIC, and one for teletype communications which is called BAUDOT. The only one of interest to Osborne users is ASCII. The numbers that represent characters are usually represented in either decimal or hexadecimal ("hex") notation.

What is "hex" notation?

Anthropologists tell us that the reason we have a

decimal number system (based on the number ten) is that we have ten fingers. This makes counting by tens pretty natural. If humanity had evolved with sixteen fingers, we would probably prefer to count in hexadecimal, which is based on the number sixteen.

Since we did not receive 16 fingers at birth, we have had to invent ways to make counting in hexadecimal convenient. The method that computers use is to represent the numbers greater than 9 with the letters A through F. That means that in decimal we have the digits:

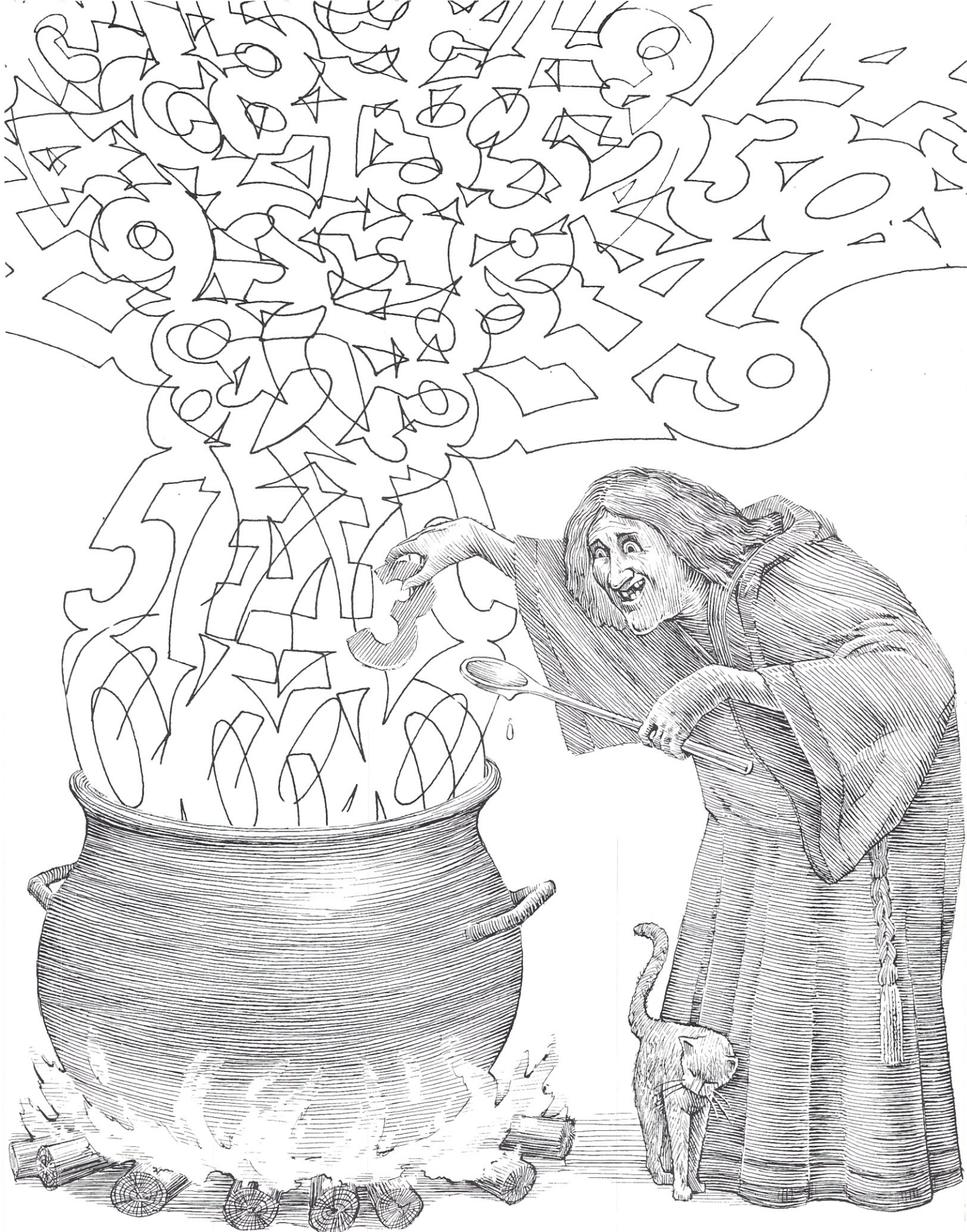
0 1 2 3 4 5 6 7 8 9

While in hexadecimal we have the digits:

0 1 2 3 4 5 6 7 8 9 A B C D E F

Does counting using these digits seem strange or difficult to you? Imagine how difficult it would be for some poor fellow who only had eight fingers to learn to count using a number system with ten digits in it (No fair to get him to count on his feet, as he also has only eight toes). He'd much rather learn to count in octal (base eight).

If you want to feel natural counting in hex, just glue



NOTE: The short, capitalized references in the ASCII column are the standard abbreviations for a performed function (FF stands for FORM FEED, LF for Line Feed, ESC for Escape, and so on).

Decimal Hexadecimal ASCII

0	00	NUL	64	40	@
1	01	SOH	65	41	A
2	02	STX	66	42	B
3	03	ETX	67	43	C
4	04	EOT	68	44	D
5	05	ENQ	69	45	E
6	06	ACU	70	46	F
7	07	BEL	71	47	G
8	08	ES	72	48	H
9	09	HT	73	49	I
10	0A	LF	74	4A	J
11	0B	VT	75	4B	K
12	0C	FF	76	4C	L
13	0D	CR	77	4D	M
14	0E	SO	78	4E	N
15	0F	SI	79	4F	O
16	10	DLE	80	50	P
17	11	DC1	81	51	Q
18	12	DC2	82	52	R
19	13	DC3	83	53	S
20	14	DC4	84	54	T
21	15	ACK	85	55	U
22	16	SYU	86	56	V
23	17	ETB	87	57	W
24	18	CAN	88	58	X
25	19	EM	89	59	Y
26	1A	SUB	90	5A	Z
27	1B	ESC	91	5B	[
28	1C	FS	92	5C	\
29	1D	GS	93	5D]
30	1E	RS	94	5E	^
31	1F	VS	95	5F	_
32	20	SPACE	96	60	REVERSE APOSTROPHE
33	21	!	97	61	a
34	22	"	98	62	b
35	23	#	99	63	c
36	24	\$	100	64	d
37	25	%	101	65	e
38	26	&	102	66	f
39	27	'	103	67	g
40	28	(104	68	h
41	29)	105	69	i
42	2A	*	106	6A	j
43	2B	+	107	6B	k
44	2C	,	108	6C	l
45	2D	-	109	6D	m
46	2E	.	110	6E	n
47	2F	/	111	6F	o
48	30	0	112	70	p
49	31	1	113	71	q
50	32	2	114	72	r
51	33	3	115	73	s
52	34	4	116	74	t
53	35	5	117	75	u
54	36	6	118	76	v
55	37	7	119	77	w
56	38	8	120	78	x
57	39	9	121	79	y
58	3A	:	122	7A	z
59	3B	;	123	7B	[
60	3C	<	124	7C]
61	3D	=	125	7D	^
62	3E	>	126	7E	_
63	3F	?	127	7F	DEL

three extra fingers onto each hand.

Why do computers use hexadecimal?

Deep down inside the electronics of a computer its fundamental capability of counting and remembering is in "binary," based on the number 2. That's because it has circuits for counting and remembering that can only be either OFF or ON, with the only legal digits being 0 and 1. Each one of these ON or OFF digits is called a "bit." For example, the binary representation of our number 2,000 is 11111010000. For convenience these bits can be put together in larger and larger groups and then given a single representation. A look at these groupings is like a visit to a computer deli at lunch time:

Two bits together can count from 0 to 3.

Three bits together can count from 0 to 7. This is the basis for the octal numbering system.

Four bits together can count from 0 to 15. This combination is called a "nybble" (or sometimes *nibble* —th). This is the basis of the hexadecimal numbering system. These can be represented with one hex digit.

Eight bits together can count from 0 to 255. This combination is called a "byte." These numbers can be represented by using two hex digits together! This is the grouping that is most commonly used for ASCII notation.

Sixteen bits together can count from 0 to 65535. In microcomputers this is usually called a "word." It is usually represented by four hex digits together and is most frequently used for memory addresses.

Bit, nybble, byte; almost makes you hungry. To get back to the questions, the reason you would want to use hex notation if you were a computer is because your basic counting and numbering ability is in binary and grouping these digits together into hex is a lot like grouping fingers into sets of five; it makes the job of talking to a human a lot easier.

There is a table for the ASCII standard in the back of many computer books and program manuals. Also there is a chart in the back of the Osborne manual called "ASCII Character codes in ascending order." To assure that you understand the relationship between the notation schemes we have presented, we've included an ASCII chart above.



CROSSTALK

CROSSTALK opens lines of communication with almost any computer modem combination and can save you time and money:

- ☐ **Easy to learn...simple to use**
- ☐ **Only a microsecond away from the data of Wall Street or the Commodities Exchange**
- ☐ **Has the largest and widest user base of any commercial CP/M data communications software package**
- ☐ **Transfer databases and documents between other OSBORNES, time sharing services, or CP/M based systems**
- ☐ **Error checked file transfer**
- ☐ **Auto-answer and auto-dial when used with a HAYES SMARTMODEM**

CROSSTALK 119.00
CROSSTALK with HAYES SMARTMODEM . . . 344.00

"Crosstalk is a very capable and reliable smart terminal and file-transfer program that can run on every commonly used CP/M system. It is "friendly" to both experienced and novice users. The price makes it a good value for the CP/M user looking for a better integrated and documented data-communication package."

INFOWORLD Dec. '81

Call Toll Free:
1-800-523-9511
In PA:
1-215-868-8219

DEALER INQUIRIES INVITED

CP/M is a registered trademark of DIGITAL RESEARCH, Inc.,
CROSSTALK and MICROSTUFF are trademarks of MICROSTUFF, INC.,
OSBORNE I is a trademark of OSBORNE COMPUTER COMPANY,
STACK SMARTMODEM is a trademark of HAYES MICROCOMPUTER PRODUCTS, Inc.
Prices, availability, and specifications are subject to change.

MICROHOUSETM

1444 Linden St.
P.O. Box 498
Bethlehem, PA 18016

Sight for Sore Eyes



EASY READER, a screen magnifying lens which adapts in minutes to the Osborne 1™ computer. The five inch monitor is magnified by a 6¾ x 4½ inch durable plastic fresnel lens. To insure portability, the lens can be detached from its mounting bracket, folded flat and laid between the keyboard & screen portion of the computer.

\$34.00 each*

Money back guarantee

	Jan	Feb	Mar
ASSETS			
Acct.s Receivable	1050.50	2500.05	2650.13
Cash	300.25	750.10	1150.00
Unsold Goods	350.42	500.01	652.46
Total Assets	1701.17	3850.16	4452.59
LIABILITIES			
Acct.s Payable	915.25	1064.25	2150.75
Storage Costs	75.00	75.00	75.00
Labor	125.00	131.00	130.00
Materials	50.25	81.17	84.23
Total Liabilities	1174.10	1351.37	2439.98
NIST			
Dep. Allowance	250.00	250.00	250.00
Taxable Income	375.00	2081.42	1725.01
^ 010 Text: NIST Memory: 20 Lost Col/Row: 025 ? for HELP			

TO ORDER

Yes please send me _____ **EASY READER** Screen at \$34.00 each.

- ☐ Personal Check ☐ Cashier's Check/Money Order
☐ Visa ☐ Master Charge (Bank No. _____)

Acct. No. _____ Exp. Date _____

Signature _____

PRINT NAME _____

Address _____

City _____ State _____ Zip _____

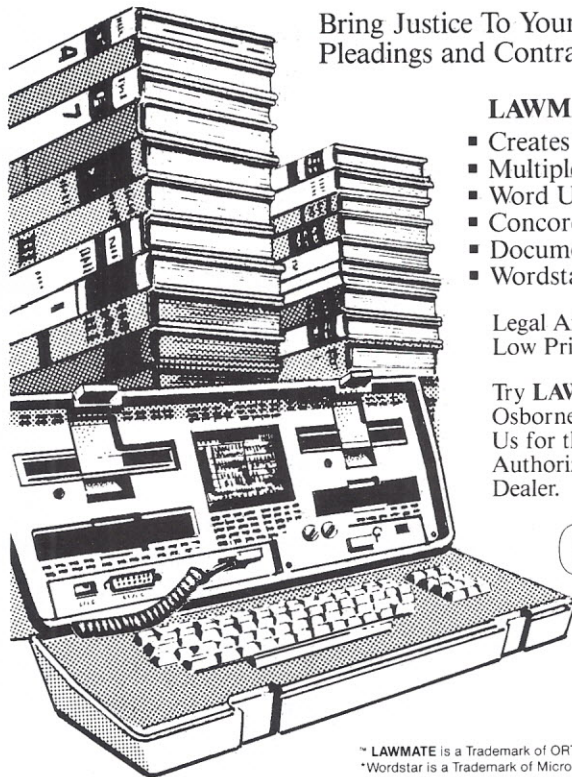
dp _____

Dipco ATTN: Jim Randono
 1900 East 12th Street
 Oakland, California 94606

*California residents add 6% for state sales tax.
 Price includes shipment anywhere in the U.S.A.

DUCES TECUM ☒ LAWMATE™

Bring Justice To Your Documents, Briefs, Pleadings and Contracts.



LAWMATE Features:

- Creates Table of Authorities Cited
- Multiple Document Indexes
- Word Use and Consistency Analysis
- Concordance Generation
- Document Line Numbering
- Wordstar* Compatible

Legal Aid at an (Almost) Unlawfully Low Price.

Try LAWMATE at Your Local Osborne Computer Dealer, or Call Us for the Name of the Nearest Authorized ORTHOCODE Textware Dealer.

ORTHOCODE
The Textware Company

THE ORTHOCODE CORPORATION
P.O. Box 6191
Albany, CA 94706
(415) 753-3222

™ LAWMATE is a Trademark of ORTHOCODE CORPORATION
*Wordstar is a Trademark of MicroPro International

OZZYWARE

OZZYWARE software features three utility packages & the Osborne General Ledger configured for the OS-1. Each package includes at least six utilities and excellent documentation, written with the Osborne(TM) owner in mind. The detailed text takes you step-by-step, through the easy to understand sample sessions and screens.

UTILITY PAK I. \$59.95

Features Programs that will recover erased files, find & lockout bad sectors, as well as a disk editor that allows you to read or write directly to your disk. In addition an interactive submit utility, and three other utilities for compressing and expanding files that allows you to conserve disk space and modem time.

UTILITY PAK II. \$59.95

A complete disk cataloging system for organizing your library, plus a multi-purpose file transfer utility (easier to use than PIP), and more...

UTILITY PAK III. . . 2 disks . . \$69.95

Features HELP for a truly portable computer library. You get ten HELP libraries, which include CPM, MBASIC, CBASIC2, MODEM7, and others. Also, allows you to make your own HELP libraries.

GENERAL LEDGER. . 2 disks . \$79.95

Includes Osborne/McGraw Hill manual.

** buy any two paks & receive a **
FREE modem program for the OS-1.

. OZZYWARE, INC.
P.O. Box 290530, Tampa, Fl. 33687
(Fl. residents include 5% sales tax.)

many items in stock

ORDER NOW
505 / 294-8856

the OZMOD

\$39.95

Inexpensive, reliable video adapter for use with the Osborne 1. Use any standard monitor as an external display.

the OZMOD RF

\$74.95

Allows any home TV set to be used as a display for the Osborne 1. Set the transmitter near the TV set, no installations or connections.

the CTADAPTER

\$59.95

Popular parallel printer adapter, allows use of any parallels configured Epson or IDS printer from the IEEE port of the Osborne 1. Specify Epson or IDS when ordering.

****NEW**NEW**NEW**NEW**NEW**NEW**NEW**NEW**NEW**NEW**

THE GAMESTYX

\$49.95

The original joysticks for the Osborne 1. Furnished complete with demo action game programs. Play the games provided or program your own.

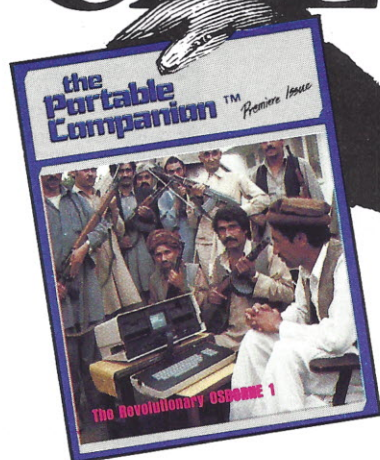
THE EXCLUSIVE DISTRIBUTORS
FOR ALL CTA PRODUCTS

Dealer inquiries welcome

ROCKY MOUNTAIN DATA

9004 MENAUL, NE □ ALBUQUERQUE, NEW MEXICO 87112 □ 505/294-8856

We now make **HOUSE CALLS**



A subscription to *The Portable Companion* helps you:

- Keep up with the latest product information
- Get the most out of your computer with short cuts and helpful hints
- Crammed full of product evaluations, application ideas and solutions to common problems
- Provides a forum for user ideas and feedback
- Keep up to date with what Osborne User groups are doing across the nation
- Dr. Adam Osborne's "From the Fountainhead" is resurrected

Don't wait to take full advantage of the benefits your Osborne 1 provides. For only \$12.50 you receive six exciting issues of *The Portable Companion* delivered to your doorstep. Complete subscription card TODAY.

**the
Portable
Companion**™





Featured Software Package

dBASE II™

A powerful data management system that organizes mailing lists, prices, accounting functions, inventories, personnel or client records.

"Another product that I have heard... nothing but high praise for, is the dBase II software from Ashton-Tate. This product is a sophisticated and fast relational data-base-management system that is finding lots of uses in small businesses everywhere."

... Mark Garetz, InfoWorld

dBase II is a data management system capable of easily handling large amounts of data. dBASE II can be programmed so that untrained personnel can accurately run even the most complicated applications.

With dBase II, you extend the power of your OSBORNE 1 to do jobs that were previously reserved for larger mainframes. Here's a partial list of potential applications:

- General Ledger
- Journal of Accounts
- Accounts Receivable
- Sales Tax Records
- Payroll
- Check Management & Writing
- Mailing Labels
- Scheduling
- Document Cross Referencing
- Accounts Payable
- Job Costing
- Time Billing
- Inventory Control
- Calendar Events

Easy to Use!

Using English-like dBase II commands, you can CREATE a data base and begin entering data into an automatically-formatted screen that shows each field name and a preformatted area in which to enter data. You can EDIT any field in any record and you can DISPLAY all or part of the record at any time. You can INSERT or DELETE records, UPDATE a file from a data base to REPLACE data, or perform all basic arithmetic operations between numeric fields in the database file.

For even faster data handling, INDEX your databases. With this time-saving feature you can find any record in under two seconds. No other system even comes close. And when it comes to output, dBASE II is heads and sub-totals above anything else on the market. The REPORT command searches through the databases and selects whatever information you want, then totals, sub-totals, and presents it exactly the way you want it.

When you print, dBase II allows you to place any character or any value exactly where you want it on the page, using simple commands.

It's all at your fingertips. You'll wonder how you managed without it!

Technical Specifications

Records per database file	65535
Characters per record	1000 max
Fields per record	32 max
Characters per field	254 max
Numeric accuracy	10 digits
Character string length	254 max
Command line length	254 max
Report header length	254 max
Index key length	100 max
Expressions in sum command	5 max

System Requirements

NOTE: The Osborne-supplied version of dBASE II is correctly configured for use only on the OSBORNE 1 computer.

A printer is recommended.

(dBase II is licensed from and the trademark of Ashton-Tate, Inc.)

Manufacturer's suggested retail price: \$595.00.

Holiday Special

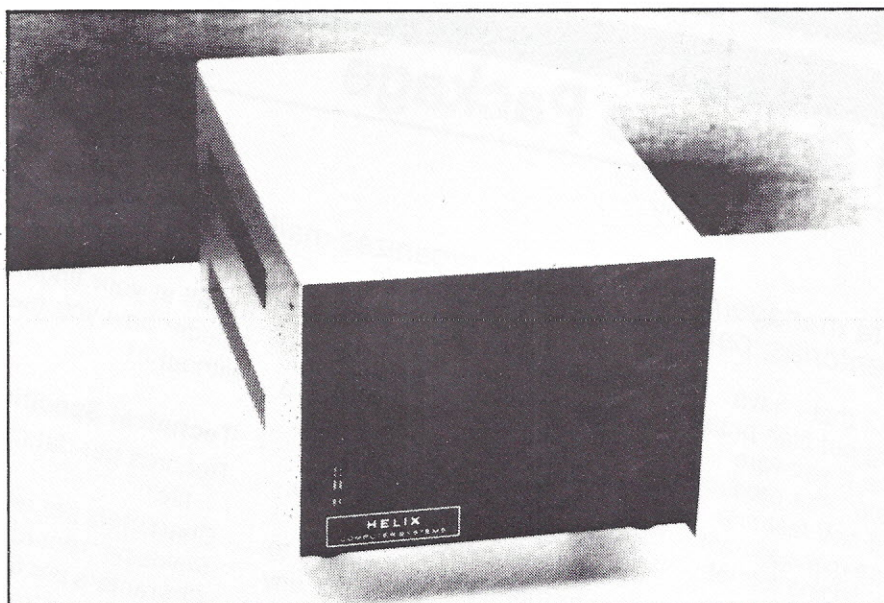
Put an Osborne under your Christmas tree and get dBASE FREE. Call or stop by your local dealer.*

***Don't miss this great holiday special. Offer expires December 24, 1982.**

HELIX

Winchesters Now Available For The Osborne™

- Z-80 adaptor card leaves external ports free and increases the speed that your information is displayed



- Easy to install
- Easy to follow instructions
- Ribbon cable disconnects for portability

**10 MB
\$3,000**

**5 MB
\$2,500**

15 MB — \$3,500

MICRO COMPUTERS OF NEW ORLEANS
504 885-5883

4539 I 10 Metairie; La 70002
800 535 8813

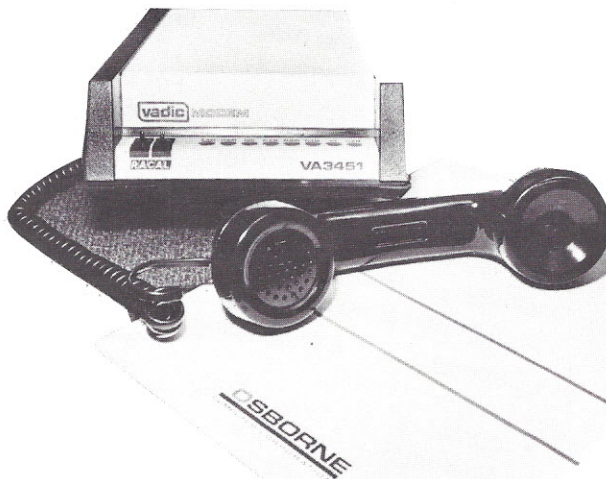
IT'S FOR YOU!

Now both you and your Osborne* can communicate with other computers. And communicate the simple way — through OZMOSIS™.

Using OZMOSIS, you can communicate with bulletin board services such as Dow Jones or CompuServe, send and receive electronic mail, access and use a large variety of CPM** software not available yet for the Osborne...or just simply transfer word processing, financial spread sheets, sales reports, etc. to and from the Osborne and a CPM computer at work or at home.

OZMOSIS is a simple way for you to communicate with local or remote data sources. The program is completely menu-driven and is designed for everyone from beginners to experts.

So why not make your Osborne work for you? Use OZMOSIS, the versatile data communications package. After all, it's really for you...



ACQUIS DATA, INC.
17192 Gillette Ave. Irvine, CA 92714
714/545-3732

OZMOSIS is a trademark of Acquis Data, Inc.
*Osborne is a trademark of Osborne Computer Corporation.
**CPM is a trademark of Digital Research, Inc.

OZMOSIS
communications software

ACCOUNTING SOFTWARE

AVAILABLE NOW FOR YOUR OSBORNE I™

For only \$289, get integrated general ledger, accounts receivable, accounts payable, and payroll **ready to run** on your **single** or double density Osborne I.

We have been delivering this full feature accounting software to Osborne I customers for over a year. There are already over 100 Osborne I users. Conversion to double density, when available, will be very simple.

General Ledger-detailed reports for company and departments comparative financial statements(month, YTD, previous year).

Accounts Receivable - instant customer account information (current and aged) with complete invoicing including open item and statement capabilities.

Accounts Payable - current and aged payables, complete vendor/voucher history, check writing, cash flow management reports.

Payroll - all types of employees. Multiple statements, user modifiable tax tables, W-2 and 941 printing (month, quarter and YTD totals).

SINGLE DENSITY SYSTEM CAPACITIES

(double density has twice the capacity)

General Ledger	600 + accounts + transactions*
Accounts Payable	600 + vendors + transactions
Accounts Receivable	600 + customers + transactions
Payroll	200 employees

*a typical small business has about 100 accounts, leaving room for 500 transactions **per month**.

Included with your system is a subscription to **TCS Debits and Credits**, a quarterly newsletter just for you. **TCS Debits and Credits** contains bug reports and corrections, enhancements to make the system more powerful or easier to use, information on compatible products, and helpful hints. Also included is **Read Me First**, written just for Osborne I users. No other TCS dealer can offer these two publications.

Includes **source code**, sample data, and user manuals (540 pages).

Requires MBASIC, 132 column printer (MX-80 with compressed mode OK). CA residents add 6½% tax. Individual modules available for \$109 each.

Also available with the Trantor Hard Disk for even greater capacity.



ROCKY MOUNTAIN SOFTWARE SYSTEMS

1280-C NEWELL AVE., SUITE 147 • WALNUT CREEK, CA 94596

(415) 625-1592

MICROCOMPUTER SOFTWARE AND SYSTEMS

10 reasons why you should call DataSource[®] for hardware.

- 1. Competitive Prices** Our volume enables us to offer you prices which are consistently competitive. Compare for yourself, then call us toll-free 800-328-2260.
- 2. Express Service: 7 days per week, 24 hours per day** You can place orders any day of the week at any hour of the day or night. Your order will be processed and shipped within 24 hours for all products in stock.
- 3. Discount Structures** We offer significant discounts to any individual, organization or user's group purchasing in quantity.
- 4. Key Account Program** For corporations and institutions, we offer a comprehensive program: volume discounts, complete maintenance packages with an on-site option, specially staffed technical support, tailored training programs and creative financing options.
- 5. Unconditional Money-Back Guarantee** We stand behind everything we sell. If you are not completely satisfied with your purchase, return the item within 60 days and receive a full refund.
- 6. Toll-Free Technical Support** We service what we sell. Our customers have direct access to our technical staff on a toll-free basis. 800-328-2260.
- 7. National Maintenance Network** We offer a variety of maintenance agreements for hardware products. Call for more information.
- 8. Flexible Payment Options** We accept all major credit cards, checks and money orders, as well as purchase orders from corporate accounts.
- 9. State-of-the-Art Software and Hardware** We carry a broad range of what we believe to be the best in software plus carefully selected hardware products and accessories.
- 10. The Personal Touch** Computers may not be human, but we are. Whenever you need answers, help or advice, we're as close as your phone. Call toll-free 800-328-2260 (in Minnesota, 612-544-3615).

Here's a small sampling of hardware available now from DataSource[®].
(If you don't see what you need, just call us at the number below.)

Smith-Corona TP-1	\$689	Hayes Smart Modem 300	\$230
C.Itoh Pro Writer	\$515	Hayes Smart Modem 300/1200	Call for price
C.Itoh Pro Writer-Serial	\$650	Cable	\$ 40

Please include 3% for shipping and handling. Minnesota residents, add 5% sales tax. Prices subject to change without notice.

FOR MORE INFORMATION CALL TOLL-FREE

1-800-328-2260

IN MINNESOTA, CALL 612-544-3615

DATA SOURCE[®]
systems Corp.

Your source for micro software and hardware

DataSource Systems[®] Corporation, Dept. GA, 1660 So. Highway 100, Minneapolis, MN 55416

American Express
MasterCard
Visa



SOFTWARE & ACCESSORIES for the OSBORNE™

GAMES #1

This popular package contains four games plus a handy four-function calculator.

TRAIN puts you at the controls of a runaway train gathering speed as it plunges downhill between two steep embankments. Suddenly the embankments veer left, and you rapidly correct the train's direction, trying desperately to preserve the safety of train and passengers. For the moment you've succeeded. Look out, though—the roadway gets narrower up ahead! (One to nine players)

Other games are **WAR**, **BOMBER**, and **BZZZT!**

GAMES # 2

A pair of fast-paced, challenging games that will leave you breathless and frustrated in your attempts to beat your friends and the computer!

BUG CRAWL... a program GUARANTEED to have bugs. Test your timing and reflexes against the computer or up to three other players, as you direct your bug to stack up the largest possible pile of eggs in the shortest possible time. Be careful, though—if you go too far the bug will eat up all of your carefully hoarded stack!

SNAKE RACE allows up to nine players to race slithery snakes at five skill levels. The action never stops, as more and more obstacles appear in your pathway to be avoided. Most of 'em just slow you down or give your tummy a friction burn, but look out for the exploding mines!

ARCADE PATMAN

Furiously as you navigate the maze, gobbling up crumbs as you dodge the five vicious beasties close on your tail. Quickly you duck out the left side, dodge back on the right, and make a run for the big **ENERGY DOT** in the corner. Once you make it you'll be safe for a moment. You'll even get a chance to revenge yourself by gobbling up the monsters—if you can catch them!

This terrific assembly-language program is a lookalike for the tremendously popular video arcade game with a similar name. You'll be amazed at the number of hours you can waste trying to master these monsters! Use the arrow keys to change direction, and listen closely for the three warning beeps that tell you when the frightened monsters are about to turn frightening again...

All in all, this program is rated A+ for action, graphics, excitement, and just plain enjoyability.

PUBLIC DOMAIN PACKAGE

This package contains ten diskette sides absolutely packed with great programs! Many are from the CP/M users group material, with some altered programs formatted especially for the OSBORNE and some new material, all of it in the public domain. These diskettes are available at \$20 each, or \$90 for the entire package, including:

• ACCOUNTING PACKAGE • ORIGINAL ADVENTURE • Z-80 ASSEMBLER • Z-80 DISASSEMBLER • CASTLE & CIA ADVENTURE • MASTER CATALOG • UTILITIES PACKAGE • CALENDAR FILES • MODEM 7 •

ACCESSORIES

Four-Foot Keyboard Cable\$25
Six-Foot Serial Printer Cable\$30
Six-Foot Serial Modem Cable\$30
Six-Foot Parallel Printer Cable\$45
(Guaranteed to run any parallel printer)
Keyboard Overlays (each)\$17
(Wordstar, Supercalc, or dBase II)
Command Summary Cards (each)\$ 8
(Wordstar, Supercalc, or dBase II)

SOFTWARE

SUDDEN! GAMES #1\$20
SUDDEN! GAMES #2\$20
SUDDEN! ARCADE PATMAN\$30
SUDDEN! INVOICE PRINTER\$30
HEX-YOUR-WOODSTAR\$55
PASCAL/M Version 4.1\$370
PASCAL/M SORT PACKAGE\$180
dBASE II\$495
GRAMMATIK\$140
MBAS/PRINT\$30
PUBLIC DOMAIN PROGRAM DISKS
(each)\$20
ENTIRE PUBLIC DOMAIN PACKAGE ...\$90
GREEN SCREEN OPTICAL FILTER .. FREE
(with any \$40 purchase)

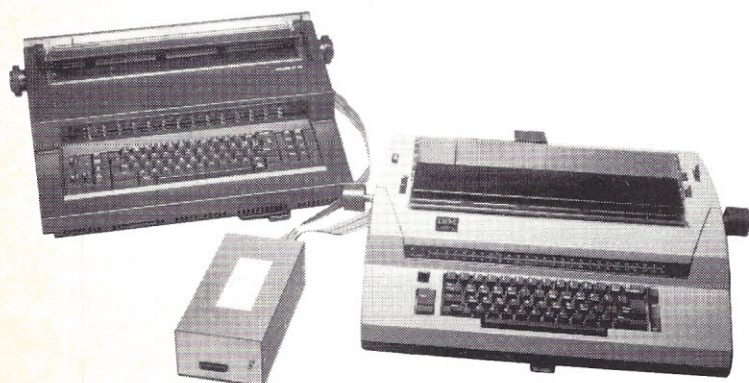
SUDDEN! PRODUCTS GROUP

1512-C PUALELE PLACE, HONOLULU, HI 96816
(808) 735-1955

HAWAII Residents add 4% Sales Tax
Shipping and handling\$3
If COD add\$3
Send cheque or money order
(Sorry, no credit cards)

OSBORNE™ COMPUTER USERS WE HAVE THE CONNECTION

CONNECT YOUR IBM SELECTRIC, IBM
ELECTRONIC OR OLIVETTI TYPEWRITER TO
YOUR OSBORNE COMPUTER.



Turn your
typewriter
into a printer
for less than
\$600.



ESCON Products, Inc
12919 Alcosta Boulevard
San Ramon, California 94583

CALL TOLL FREE: (800) 227-2148 CA: (415) 820-1256

OSBORNE 1TM SOFTWARE

ACCOUNTING
DATA BASE
MANAGEMENT
ENTERTAINMENT
LANGUAGES
MAILING LIST
MANUFACTURING/
RETAIL SYSTEMS
MEDICAL/DENTAL
SYSTEMS
MODELING, PLANNING
& ANALYSIS
TELECOMMUNICATIONS
TIME, BILLING
& SCHEDULING
WORD PROCESSING

Largest Selection
Of Osborne 1 Software
Over 50 Programs Total

Single & Double Density

Write Or Call For Our List

CORNERSTONE SOFTWARE

PO BOX 5151
SAN JOSE, CA 95150
(408) 972-0515

DEALER INQUIRES INVITED

OSBORNE 1 IS A TRADE MARK OF OSBORNE
COMPUTER CORPORATION
COPYRIGHT © 1981 CORNERSTONE SOFTWARE

Software for Osborne 1TM

SBACOUNT: Accounting for small business. Tracks all income & outgo, prints checks, posts chart of accounts. Prints chart of accounts, trial balance, profit and loss statement, & check ledger. Reconciles and prints reconciliation. Generates an Income & Expense journal for audit purposes. **ONLY \$79.00**

MBACOUNT: Accounting for small business. Full general ledger (20 asset, 20 liability, 20 income, 30 expense & 10 capital accounts all user assigned) PLUS all the features of SBACOUNT as above. **ONLY \$89.00**

PROFBILL: Automatic bookkeeping & invoicing for Doctors, Lawyers and other professional people who invoice at various hourly rates. Will handle up to nine partners/employees. Prints invoice or saves for future billing. **ONLY \$89.00**

\$FINANCE: Personal financial program. Prints checks, posts amount to selected budget category, posts debits and deposits, prints check ledger, reconciles and prints reconciliation statement. Similar program for charge cards. Extracts and prints list of expenditures in selected budget categories. **ONLY \$79.00**

TOUCHTYP: Touch typing course, Beginning, Intermediate & Advanced. Tests and displays typos and displays final score. **ONLY \$79.00**

STANFORM: Need to fill out standard or non-standard forms? This program generates programs for printing data in the proper location on invoices, gov't forms, insurance claims, any form that will fit into your printer. **ONLY \$79.00**

MSBCHART: Prints MICROSOFT BASIC® programs, prints cross reference list of all referenced lines, prints list of variables cross referenced to each line where used. A godsend if you modify or debug Mbasic programs. **ONLY \$79.00**

(Price includes disc, manual, shipment next work day by insured first class mail) Phone or mail in your order today or request detailed datasheet on any program. (Visa, Mastercharge & American Express cards accepted)

OSBORNE 1 is a registered trademark of OSBORNE COMPUTER.
MICROSOFT BASIC is a registered trademark of MICROSOFT.

MAP (Micro-Art Programmers) Innovative Man/Machine Interface
173 Birch Avenue Cayucos, California 93430 Phone: (805) 995-2329

telecommunications? use SOFTCOM®

SOFTCOM® is a CP/M® based communications utility which can be used as an **intelligent terminal program** and as a **CP/M® to CP/M® file transfer utility**.

Intelligent terminal mode supports 300/1200 baud modems and full or half duplex. Data sent to the host computer can be entered at the terminal or it can be sent directly from disk files which were prepared 'off line'. Data received from the host can be saved in disk files and/or printed. File transfers with SOFTCOM® greatly reduce storage, line and CPU charges.

Protocol file transfer mode supports transfers of text and binary files at

speeds up to 19,200 baud with error detection and automatic retry. File transfers can be initiated and controlled at either end. Unattended transfers can be set up using the CP/M® SUBMIT and XSUB utilities.

Protocol file transfers are ideal for: telecommunications between a company's home and branch offices, software distribution and maintenance and media conversion between computers with different types of disk media.

Three license options are available: single CPU (\$150), dual CPU (\$250) and multi CPU (\$450). For more information, call our software HOT LINE.

The Software Store

706 Chippewa Square • Marquette MI 49855 • Phone: 906/228-7622

Shipping \$3 USA/\$8 Foreign
Prepaid, COD, VISA OR MASTERCARD
orders accepted.
Complete catalog available

CP/M® is a trademark of
Digital Research Inc.
SOFTCOM® is a trademark of
The Software Store

Three good deals for Osborne™ users.

SuperCalc™ is already a good deal-- the very best electronic spreadsheet you can own. Since you've been using it all this time, you already know that. Now, we're offering three very good deals so you can get even more out of SuperCalc than ever. Just send us the coupon for the good deal of your choice.

#1: The AnswerCard™:

Here's a quick reference guide to help you get the most out of your Osborne SuperCalc quickly and easily. Send \$1.

#2: Sorcim Newsletter:

Every issue of our SuperNews includes tips on new applications, template building, news from our programmers and development, and more. The first issue is just out so you haven't missed anything yet.

#3: SuperData Interchange™ (SDI):

Converts SuperCalc data files to or from ASCII files which are usable by other software, e.g., data base managers or special-purpose BASIC programs.

Coupon #1

Quick, send the AnswerCard™. My \$1 is enclosed.

Name: _____

Title: _____

Company: _____

Address: _____

City: _____ State: _____ Zip: _____

Coupon #3

SuperData Interchange™ is exactly what I need. My check or money order for \$50 is enclosed.

Name: _____

Title: _____

Company: _____

Address: _____

City: _____ State: _____ Zip: _____

Coupon #2

Yes, I want to receive SuperNews.

Name: _____

Title: _____

Company: _____

Address: _____

City: _____ State: _____ Zip: _____

SuperCalc
by Sorcim

SORCIM

The powerhouse of software.

2310 Lundi Avenue San Jose, CA 95131 408-942-1727

the
Processed Word
the
Processed Word
the
Processed Word
the
Processed Word
the
Processed Word
the
Processed Word
the
Processed Word
the
Processed Word
the
Processed Word

Easy Writer

by Mike Iannamico

In my last article I promised to present some information about the Thesaurus program created by Dictionaries Publishing Company and soon to be released by Osborne Computer Corporation. In this issue's column I'll not only present a brief overview of Thesaurus, but throw in a brief example of how to use Mail-Merge.

Words At Your Fingertips

Thesaurus works in conjunction with WordStar, allowing you to single out any word in your text and have a list of synonyms for that word appear on the screen. Thesaurus is yet another in the growing list of useful programs designed to spoil writers. No more breaking your train of thought, groping for the 'Synonym Finder,' and sifting through numerous pages of dictionary entries, only to decide that, compared to the alternatives, your choice isn't so bad after all.

The first step in using Thesaurus is to merge the program with WordStar, which involves making some room on your WordStar diskette (erase SAMPLE.TXT, for example), and answering a few questions.

To use Thesaurus, you place the cursor on the word that doesn't express your intended thought and press the ESC key twice. Suddenly

the word is highlighted, the top of the screen clears, and a list of synonyms is displayed at the top of the screen. You scan through the choices presented, and if one of the words looks appropriate, you can have it substituted for the misfit word. If you select a word for which no synonym can be found in the Thesaurus dictionary, a list of words with similar meanings is presented.

The version of Thesaurus that I examined was running on an eight-inch diskette and looked to be a very helpful tool. A version is currently being tailored especially for the Osborne 1 and should be ready shortly after you read this. Thesaurus requires double density in order to keep the large dictionary of synonyms handy at all times. As more efficient and larger storage technologies become available, tools like Thesaurus and Spellguard should become even more effective than they already are. In the meantime, these recent advance word processing add-on software packages make writing easier and more convenient.

Printing a Series of Files

One idea that you might not have thought of that I want to share with you concerns how to set up a specialized print file that not only lets you print a series of files from more than

one diskette, but also allows you to specify the formatting of the print-out. The really convenient feature about this print file is that it prompts you for the name of each file and asks you about formatting just before printing begins. You have probably already guessed that we will be making use of a few MailMerge DOT commands to create the print file, and you are absolutely correct. Here's how its done:

Start up WordStar, but do not log onto Drive B! You will be storing the print file with the other programs on the WordStar diskette in Drive A. Perhaps you've already discovered how little storage space is left on the WordStar program diskette. You will need to make some room by getting rid of the sample file. To do this, press **Y**, supply the filename **SAMPLE.TXT**, and press **RETURN**. Deleting the sample file should give you just enough room to create the print file. Now that you've got some elbow room, create a Non Document file by pressing **N**, entering the name **PRINT** (what else?) and pressing **RETURN**. Here is the sequence of DOT commands that you should enter in your **PRINT** file:

```
..Print Command File
.DM Supply the name of each file
you want printed
.DM -----
.AV "Name of first file to print",
FILE1
.AV "Name of second file to
print", FILE2
.AV "Name of third file to print",
FILE3
.AV "Name of file on another
diskette", FILE5
.CS Specify margins, or press
RETURN
.DM -----
.AV "Set right margin to?", RM
.AV "Set left margin to?", LM
.PF ON:
.RM &RM&:
.LM &LM&:
.CS Your files are not being printed
.DM Observe when diskette change
is requested
.FI B:&FILE1&
.FI B:&FILE2&
.FI B:&FILE3&
.FI B:&FILE4&
.FI B:&FILE5& CHANGE
```

I set up this file to be as ubiquitous as possible to demonstrate what options are available. More than likely, you will want to modify this print file

to suit your particular application. All this file does is use the first batch of **.AV** commands to ask for the files to be inserted by each **.FI** in the command file and print one after another. The second batch of **.AV** commands ask for the margins to be used by the **.RM** and **.LM** commands within the command file. Sprinkle all this with a few messages using **.DM** and:

When you merge print this file by pressing **M** from the No-File menu, supplying its name (**PRINT**), and pressing **ESC**, the following prompts will appear:

Supply the name of each file
you want printed

Name of first file to print?
Name of second file to print?
Name of third file to print?
Name of fourth file to print?
Name of file on another disk

You would supply the name of each file that you want printed. The

Write your own software library.

Now there's no need to spend money on an extensive program library for your personal computer. You can do it *yourself* with Personal Pearl.

There's no complicated programming language to learn and no jargon to memorize. Pearl speaks plain English, which means you have instant program-ability.

All you need to make use of Personal Pearl is a 56K RAM microcomputer with CP/M operating system. Now there is no limit to the programs you can create. The amount of record storage space and maximum file size are determined only by your computer's disk capacity.

Here's how you do it.

To write a program with Personal Pearl, use the screen like a piece of paper in the typewriter. Pearl's powerful Program Generator allows you to type exactly what you want your computer to respond to, in the way that feels comfortable to you. This personal link with the entire program enables you to solve even the most complex problems easily.

Personal Pearl also functions as a Forms and Reports Generator, so documents come out looking just the way you want them. You can modify formats, add reports, change displays or update information at any time. In addition, Pearl's Data Base Manager helps you sort, search, reorganize and analyze as quick as a flash!

Use it to customize the software you already have.

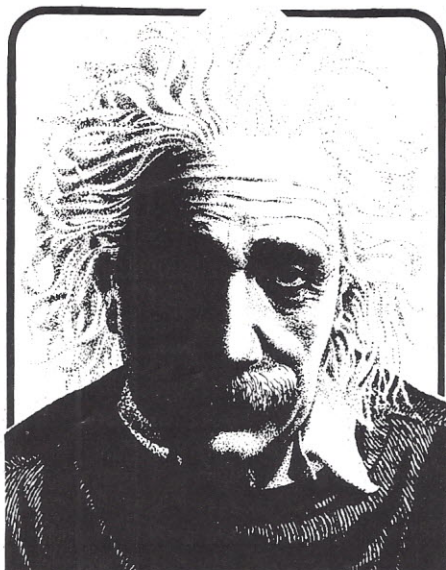
Pearl can be used interactively with your existing spread sheet or word processing programs. You can transfer information from Pearl to those programs to suit your particular needs.

The Personal Information System™

\$295. Available for Osborne 1™

personal pearl™

Relational Systems International Corp.
P.O. Box 13850 • Salem OR 97309
503-363-8929



"You don't have to be a genius to recognize a real bargain when you see it!"

Free* Software

OSBORNE USERS

Over 200 public domain software programs including many popular games, valuable utilities, and useful specialty programs (modem, ham, etc.), are available to you **FREE** through the National Public Clearinghouse.

—SAMPLE DISKS—

- I. GAMES - MBASIC**
Eliza, Startrek, Othello, Baseball, Dots
- II. GAMES - C/PM**
Adventure, Biorythms
- III. UTILITIES - C/PM**
Contains over \$100 worth of valuable C/PM utilities! (10 programs)

*A \$10/disk service charge is made to cover the cost of the disk plus handling and shipping charges—the software is free!

Special Offer!

All 3 for only \$25

To order, send check or money order to:

A-1 COMPUTER

P.O. Box 1442
Orange Park, FL 32073

A complete listing of available programs will be sent with each order. Custom disks available on request.

the
Processed Word

last prompt allows you to name a file which exists on an entirely different diskette. If you don't have that many files to print then merely press RETURN. If you have more files then increase the list. Next you are asked:

Specify margins, or press RETURN

Set right margin to?
Set left margin to?

At this point you can change the right margin to whatever you want.

This is how I have my files that were created with a right margin of 52 printed with a right margin of 66. You can press RETURN to leave the margins set to their default values. You can add other commands to change line spacing and to affect justification if you want to. I sometimes have my documents double spaced before handing them off to an editor or proof reader. When the names of the files to be printed have been supplied, and you have specified the desired margins, the files are printed in succession until a diskette change is required. You will see this message:

Your files are now being printed
Observe when diskette change is requested

If you entered the name of a file to be

EY-EZ-OR™ GLARE REDUCING INTRODUCTORY OSBORNE™ OWNER

**FILTER PRICE
ONLY \$5.95**

INCLUDES
POST/HAND
REMIT CHK or M.O.

Please specify

Case: Beige/Blue

Filter: Green, Yellow, Amber

EY-EZ-OR

4505 KITTIWAKE WAY
OCEANSIDE, CA 92056

CVA-1 COMPOSITE VIDEO ADAPTER...

lets you connect any standard video monitor to your OSBORNE for an easier to see display. Fits old and new model OSBORNES.

Just plug it into your computer and connect your monitor.

Retains HALF - INTENSITY; duplicates all internal screen attributes and internal display still operates.

CVA-1 is small enough to remain installed, even when you pack up your computer!

Just **\$34.95** plus \$2.50 shipping and handling. (C.O.D. additional \$2.50.)



Dealer inquiries invited.

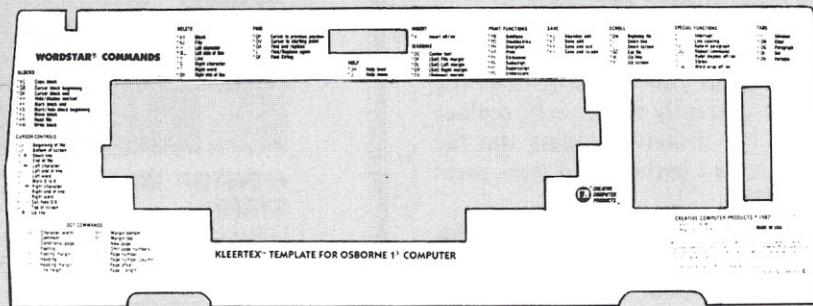
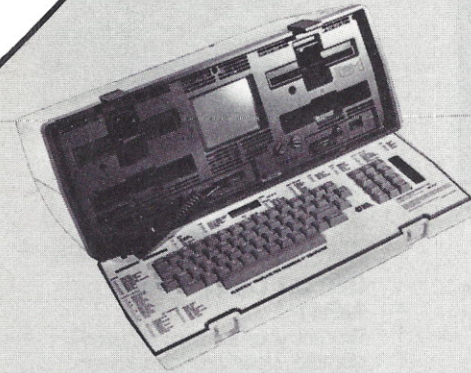
[Ask about other OSBORNE™ compatible products.]



integrated systems, inc.
125 Sharon Avenue, Houghton, MI 49931
(906) 482-2305

**NEW
TIME-SAVER**

IMMEDIATELY VISIBLE PROGRAM COMMANDS for the OSBORNE I™ COMPUTER



- ALPHABETICAL LISTING OF COMMANDS
- EASY TO READ
- QUICK ACCESS
- DURABLE PLASTIC
- NON GLARE SURFACE
- COLOR COORDINATED
- FITS INTO CASE

KLEERTEX™ TEMPLATE ONLY \$19.95



**CREATIVE
COMPUTER
PRODUCTS™**

OSBORNE I is a trademark of the Osborne Computer Corporation. WORDSTAR is a registered trademark of the Micro Pro International Corporation. D BASE II is a trademark of Ashton-Tate, Inc. M BASIC is a registered trademark of Micro Soft. Supercalc is a trademark of SORCIM, Inc. Creative Computer Products is an independent company, specializing in Sophisticated Solutions for computer operators.

..... CUT HERE

Please send me the following KLEERTEX™ TEMPLATE(S) at \$19.95 each plus \$1.75 postage and handling charge: (California residents add 6% sales tax.)

___ WORDSTAR® Commands ___ SUPERCALC® Commands ___ D BASE II® Commands ___ M BASIC® Commands

I WANT TO PAY FOR KLEERTEX™ TEMPLATE(S) AS FOLLOWS:

- ☐ Check Enclosed
☐ Master Card

- ☐ VISA
☐ Money Order

For Model:

- ☐ Beige/Black
☐ Gray/Blue

(PLEASE PRINT CLEARLY)

CARD NO. _____ EXP. DATE _____

SIGNATURE _____

NAME _____

ADDRESS _____

CITY _____

STATE _____

ZIP _____

Dealer inquiries welcomed.

Mail Order Form Today To:
Creative Computer Products
P.O. Box 85152 • MB134
San Diego, CA 92138

(619) 268-0793

☐ Please send your FREE catalog of products for the OSBORNE I™.



© CREATIVE COMPUTER PRODUCTS™ 1982



printed from another diskette you are prompted for the diskette change like so:

Change diskette and press
RETURN

At this point you would remove the diskette currently in Drive B, replace it with the diskette holding the file you specified earlier, and then press RETURN.

That's how the print file works, but before trying to use it, you have to make sure your files are set up to be processed effectively. This means that unless you pay attention to a few unspoken rules for using MailMerge, your files may not be printed the way you want them to. If, for instance, you want each of your files to start at the beginning of a new page, you need to make use of the .PA Conditional Page command as the last item in the file. Also, you must pay particular attention and observe extreme care to make sure that no extra spaces, returns, or soft hyphens are in the file. All three of these invisible menaces can wreak havoc with the formatting of the files during printing. I found this out the hard way, and required help from the Wizard to correct the situation.

After you create your own specialized print file based on the framework I have suggested, use SETUP to program one of the function keys to initiate it.

Use SETUP to have the 0 key issue the command:

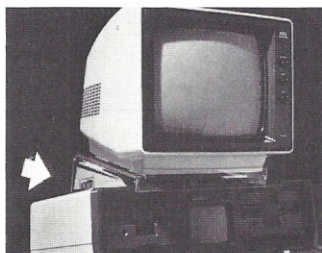
M A:PRINT ESC RETURN

You may need the carriage return in order to have the ESCAPE key included in the function key series with some versions of CP/M and WordStar. However it's done, you can invoke the PRINT file from Drive B by issuing a > 0.

MORE SAVINGS FROM MONTOP®

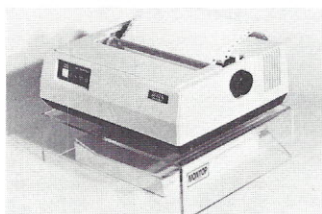


Osborne™ accessories and software



MONTOP MONITOR STAND

Custom stand holds monitor firmly on top of Osborne and lifts monitor off vent of newer model. Saves desk space and places screen at easy-to-read angle. Only \$21.95.



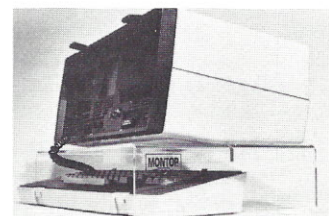
PRINTER STANDS

Stores paper under printer. Keeps paper straight for smoother feedthrough. Sturdy and attractive. Small size (MX-80, OKI 80, 82, etc.)—\$29.95 Large size (MX-100, OKI 83, 84, etc.)—\$34.95



ONTOP DUST COVER NEW!

Protect your investment with durable, clear vinyl dust cover. Osborne and monitor \$15.95. Osborne only \$13.95. Available in clothbacked leather look for \$4.00 extra.



DOUBLE DECKER

Lifts computer for better viewing of small screen. The keyboard tucks underneath when finished. This spacesaver is reinforced for extra sturdiness. \$34.95.

SOFTWARE

HexPrintR™ by C.I. Software. Popular tool enables user to access full printer capabilities through WordStar®. Easy to use and a valuable productivity investment. Only \$39.00.

(WordStar® is a registered trademark of MicroPro Corp.)

Timin FORTH Release 3 by Timin Engineering Company now available for Osborne. Includes Floating Point Vocabulary, Visual Editor and CP/M Utility Package. \$249.00.

SGW ENTERPRISES, P.O. Box 1015, Del Mar, California 92014 714-755-8324

Please send me:

Quantity _____ Item _____

Total amount enclosed \$ _____
Add \$2.50 shipping & handling per item. CA Residents add 6% sales tax.
☐ Please send catalog

☐ Check enclosed

☐ Money order enclosed

☐ VISA/MASTERCARD # _____

Expiration Date _____

Signature _____

Send to:

Name _____

Address _____

City _____

State _____



Zip _____

WordStarlet

Q: When printing the first copy of a letter using MailMerge with WordStar everything is fine, but on the second page and thereafter, the first dot command prints out. Why? How can this be corrected?

A: The first dot command is printed because there are trailing characters after the last carriage return (usually trailing spaces). The reason the dot commands are printed rather than interpreted is that MailMerge does not recognize the end of a line until a carriage return is reached. Therefore, WordStar wraps around to the first line of the document to find a car-

riage return. The dot command is not recognized as starting in the first character position, and is consequently printed as text.

To solve this problem, type ^QC to reach the end of the file, type ^Y to erase the trailing spaces, and make sure the last line ends with a hard carriage return.

Reprinted from the WordStar Reporter by permission.

Get the Most from your Printer & WordStar® with

Custom Installations

For all C. Itoh, NEC and dot matrix printers.
(Others available soon.)

These installations provide optimum setting of all the printer control codes which can save you hours of installation drudgery.

You receive:

- ★ A printed explanation of the installed printer control codes
- ★ Superscripting and subscripting
- ★ A list of hints and suggestions
- ★ A demonstration print file

\$25.00 Installed and delivered*
(specify printer)

Sample printout: \$1. (specify printer)

HexPrintR™

This program breaks through the WordStar®/printer barrier by giving the printer code ^R the ability to send ANY character or code AT ALL to your printer, even 8 bit codes.

Need special characters like:

! " # \$ % & ' () * + , - . / : ;

HexPrintR gives them to you if your printer has bit image graphics capabilities. Manual included.

\$39.00

Delivered

\$45.00

Installed and delivered*

Manual only: \$3. (applicable to order)

Together a **Custom Installation** and **HexPrintR™** give you one of the most refined and powerful sets of printer control codes available today.

\$65.00 Installed and delivered*



SOFTWARE & COMPUTER PRODUCTS (714) 483-6384
1380 Garnet Ave. - E149 - San Diego CA 92109

*Include a copy of your WordStar® diskette with a piece of corrugated cardboard.
WordStar® is a registered trademark of the Micro Pro Corporation.
California residents add 6% sales tax.

ELECTRONIC TYPEWRITER INTERFACE \$395

**WILL INTERFACE
WITH:** IBM, Adler-Royal,
Olivetti Praxis, Olympus,
Brother, Silverreed,
Smith-Corona

- FEATURES:**
- 780A 4MHZ CPU control & processing
 - 4 or 8K CMOS Battery back-up memory
 - 16K EPROM storage for programs
 - 2 serial ports
 - 300-600 baud auto-answer/auto-dial modem
 - Interface for micro-standard cassette recorders for mass storage

Dealer inquiries invited.
Quantity discounts available.

Write or Call
WHOLESALE SUPPLIERS
P.O. Box 22428
Carmel, CA. 93922
(408) 373-0320

"I Love To Drive My 380Z"

"...And I can drive it at 32 CPS with an Apple, Osborne,TM TRS 80 and others."

DTC 380Z

The DTC 380Z: A new standard in advanced technology at a dramatically low price

- 48K buffer for high speed throughput
- Diablo 1640/1650/630 software compatible
- Serial and parallel interfaces
- Serial baud rates to 19.2K
- Automatic baud rate selection
- Four CPU's, no cables, belts, wheels or pulleys
- Letter quality daisy wheel printer
- 12 print styles, 15 languages, 96 char. wheel, standard ribbon
- Automatic bi-directional printing
- Proven reliability 100,000 printer mechanisms produced
- Up to 32 CPS print speed in typical applications
- Interconnecting cables for all major micro-computers
- Automatic proportional spacing
- Parallel 6K bytes per sec. transfer rate
- Optional extras: forms tractor, cut sheet feeder.

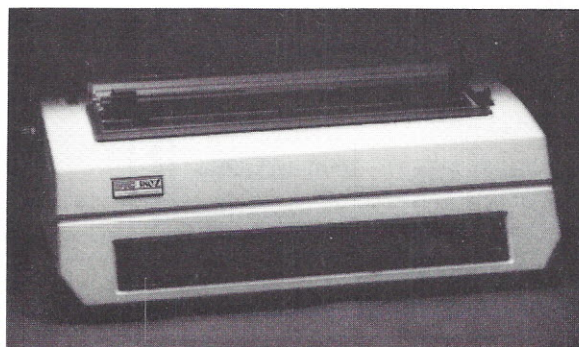
MONEY BACK GUARANTEE

ORDER NOW

VISA • MASTERCARD

800-962-8185

in CA 800-538-9294



DTC Data Terminals & Communications
590 Division St., Campbell, CA 95008

The DTC 380Z
DAISY
Wheel Printer

\$ **1199.**

new Products—
new Products—
new Products—
new Products—
new Products—
new Products—
new Products—
new Products—
new Products—
new Products—

Put Your Modem On Automatic

TNW Corporation's new *Operator* interfaces between your computer and modem, and between your modem and your telephone line, providing full auto-dial, auto-answer capabilities for even the simplest modem.

Price for the *Operator* is \$129, with deliveries scheduled to start in early fall.

TNW Corporation
3444 Hancock Street
San Diego, CA 92110
714-296-2115

Cooking and Aliens

The Software Toolworks has announced two new programs for the Osborne 1 computer.

The first, *Invaders*, is an arcade-style game using the graphics of the Osborne 1. Waves of attacking aliens attempt to land, as the player fights them off with a space cannon and hides behind shrinking barricades. Suggested price is \$19.95.

Computer Chef, the second new Osborne program, turns your computer from homewrecker to homemaker. A cookbook on a diskette, it features automatic recipe search and ingredient scaling. *Computer Chef* comes with over 70 tested recipes, and your personal recipes can be added using most any text editor or word processor. Suggested price is \$29.95.

The Software Toolworks
14478 Glorietta Drive
Sherman Oaks, CA 91423
(213) 986-4885

52-Column General Ledger

The popular *TCS Accounting* programs have been enhanced and

adapted for use on the Osborne 1 by Computer People.

General Ledger, Accounts Payable, Accounts Receivable, Payroll, and Inventory Management modules are all available. The General Ledger module features automatic reversing of entry transactions, verification of account number at entry, up to 99 departments, and can post entries from the other modules. Price for the General Ledger is \$295.

Computer People
600 Pine Creek Drive
Greenville, SC 29605

An Osborne Fan

If you must use your Osborne 1 in areas where temperatures exceed the suggested maximum operating temperature, perhaps you'd be interested in having some small surgery done on your machine.

Canyes Computer Services offers the installation of a *three-inch fan* in your Osborne 1 for \$45. The fan is installed next to the carrying handle on the side opposite the power cord well. Before sending your Osborne off for modification though, contact the company to arrange the transportation of your machine.

Canyes Computer Services
3117 Lancer Drive
Hyattsville, MD 20782

A 'Smarter' Ozzie

Three software packages suitable for use on the Osborne 1 computer are now available from ION Software Distributors.

Smartkey is a resident CP/M utility program that allows each individual key of the console keyboard to be dynamically redefined to represent different character codes from that produced by the hardware. List price is \$39.00.

A second package, *Smartprint* (re-

quires Smartkey), can be used to translate ASCII codes en route to the system printer to corresponding codes and strings, as required by the user. List price is \$19.00.

The CP/M *Extension Utility Pack* includes Spool, Unspool, Qsub and Restore, a collection of programs designed to supplement the basic operating system by extending and simplifying current CP/M functions. List price is \$39.00.

Manuals only for the software packages described are available upon request.

ION Software Distributors
3032 60th Avenue SE
Mercer Island, WA 98040
206-236-2494

It Figures

Now any business with an Osborne 1 computer can perform more sophisticated spreadsheet analysis. *Fast Figure*, a new electronic spreadsheet program with helping menus, offers sophisticated business calculations like depreciation, present value and net present value, internal rate of

return, compound growth, standard deviation and what-if analysis in a package any business can easily afford.

Fast Figure's three dimensional file-sharing feature lets the user create additional, multiple spreadsheets from one file without time-consuming re-entry of data. *Fast Figure* is available from Hourglass Systems for \$150.

Hourglass Systems
PO Box 312
Glen Ellyn, IL 60137
312-690-1855

Talk to Me

Advanced Systems Concepts has introduced its expanded family of software-controlled *port expanders*. The expanders allow single-port computers, like the Osborne, to interface with multiple peripherals or computers. The Model QS11 allows a single port to talk to one of four output devices. The Modem MO11 allows four computers, modems, or terminals to share a common unit, such as a quality printer.

The unit is easily software-

controlled and weighs just two pounds. The suggested price is \$395.

Advanced Systems Concepts
PO Box Q
Altadena, CA 91001
213-794-2308

Calling All Users

Osborne Computer Corporation has announced its compact data communications modem, *Comm-Pac*. This new \$265 device allows users to communicate with other computers using a variety of different data protocols.

The modem slips inside the left-hand diskette storage pocket and plugs into the modem connector on the Osborne 1. A modular jack is provided for connection to your telephone system. Included with the modem is *Amcall*, software that supports all of the functions the modem is capable of.

Users of the new modem can automatically dial any predefined numbers or type in a number for the modem to call. Once communication is established with another device, the

The **First Osborne Group (F O G)** has been formed as a Users' Group for persons using or interested in Osborne Computers and the CP/M Disk Operating System with related Software. Membership is available to any interested party whether or not they currently own an Osborne Computer. **F O G**, the **FOGHORN**, and the diskette library are all supported by volunteer contributions of time, money, and software from all active **F O G** members. Guests are welcome at our meetings at any time (as long as they do not participate in Piracy or copying of Proprietary software), but dues of \$24.00/yr in U.S. or \$30.00/yr elsewhere are required in order to receive the **FOGHORN**, have access to the diskette Library, or derive other available benefits.



CUT HERE

First Osborne Group (F O G) Membership Application Form

	Yes	No	Maybe
NAME: _____			
ADDRESS: _____			
CITY: _____			
STATE: _____ ZIP: _____ COUNTRY: _____			
PHONES: _____			
O-1 Owner? <input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Modem? <input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
INTERESTS: _____			

Send the completed application and your payment to: **First Osborne Group (F O G)**, P. O. BOX 11683-A, Palo Alto, CA 94306



Software now available for the Osborne 1™

DocuMate/Plus™

This is an indexing program that works with WordStar® to create an automatic text index or table of contents. It supports up to 8 levels of sub-indexing using either words or phrases. (Orthocode™)

Disk Doctor™

Reclaims damaged diskettes and allows you to create accidentally erased files. Disk Doctor helps the Osborne user to restore damaged or faulty diskettes, recovering as much data as it can. As an added benefit, Disk Doctor can also certify new diskettes and eliminate bad sectors. (Supersoft®)

Math*™

Adds basic math capability to WordStar®. Math* performs addition, subtraction, multiplication and division in rows or columns. (Force Two®)

Enumerator™

Enumerator adds variable line numbering abilities to your documents. With Enumerator, you can number by line, paragraph, or any sequential pattern (ideal for attorneys). (Orthocode™)

The Micro Link®

For phone communications, this easy-to-use package allows the Osborne user to interface with electronic bulletin boards, information services, other remote computers, and sends and receives files. (Wordcraft™)

Datebook™

This popular program handles calendar and appointment schedules for the busy executive or professional. A valuable tool for time management, Datebook keeps a permanent record of each day's activities for future reference. (Organic Software, Digital Marketing®)

Spellguard™

Spellguard pinpoints spelling and typographical errors in written materials with its 20,000-word dictionary. The dictionary can be expanded to include technical words, foreign languages, etc. (Innovative Software®)

SuperSort™

Performs sorting, merging, and record selection functions on data files. SuperSort is compatible with Basic, Fortran, Cobol and assembler programs, and can be used with mail lists maintained with Mailman™ and WordStar® (MicroPro™)

Personal Pearl™

The easy way to create custom application programs through English language interaction with your Osborne computer. Personal Pearl asks you for examples of the results you require from your Osborne and then produces an applications program. (Relational Systems International®)

Mailman™

Mailman creates and manages your mailing list. Formatted screen entry with eight different selecting criteria gives the user ease of access and entry, along with discrete listing capabilities. (Standard Microsystems®)

Milestone™

Milestone is ideal for the planning, priority scheduling and tracking of small projects. Milestone creates Gant project charts and can be configured to find the critical path of a project. (Organic Software®)

Money Maestro™

Money Maestro is designed to provide financial recordkeeping, tax reporting and budgeting for professionals, clubs, families and very small businesses. Those who value accurate records, but don't require full-blown double-entry accounting systems, will find Money Maestro to be a simple and complete money management package. (Inno Systems, Inc.®)

Footnote™

Footnote numbers and formats footnote calls and the actual notes in WordStar® text files. Footnote numbers notes consecutively, and formats the file, placing the notes at the bottom of the appropriate page, or moving them out of the text to a separate footnote file. (Pro/Tem Software, Inc.®)

DataStar™

DataStar is an easy-to-learn, versatile and comprehensive data entry program, retrieval and update system for your Osborne. DataStar handles recordkeeping applications from initial form design through updating, addition/deletion, and search/retrieval of records. (MicroPro™)

dBase II™

dBase II is a powerful, data management tool for constructing and manipulating numeric and character information files. A special feature of dBase II is its own English-style program-building language. You may SORT, EDIT, or DISPLAY a database directly from the keyboard, or write menus and programs to support your specific applications. (Ashton-Tate, Inc.™)

MBasic Compiler™

Allows Osborne users to compile their MBasic interpretive programs. The Basic Compiler provides you with three major benefits: 1) increased speed of execution for most programs; 2) decreased program size for extremely large programs; 3) source code security. (Microsoft, Inc.®)

These software packages are available at your local Osborne dealer.

Osborne 1 functions as a terminal on that other device, or may be used to transfer information from an Osborne format diskette to the other device.

Two Osborne owners can communicate via the phone lines with the Osborne modem, transferring files, or simply "chatting" back and forth with their keyboards.

Also included in the price of the modem are free computing time on The source, a large computer installation that provides a number of billboard services not available elsewhere, and on the Dow Jones Information Network.

The *Amcall* software, in addition to supporting the auto-answer, auto-dialing capabilities of the modem, also allows transfers of files in the

CP/M User Group MODEM/X-MODEM format, in a special *Amcall* format, or with no formatting whatsoever. The CP/M User Group and *Amcall* formats allow transferring of COM-type files, and feature full error-checking during the transmission; erroneous information is ignored and missing information is retransferred.

The Osborne modem does not have to be disconnected to use a serial printer, nor does it have to be removed to close the case and travel with it. In short, the Osborne modem is as portable as the comoputer it was designed to function with.

Osborne Computer Corporation
26538 Danti Court
Hayward, CA 94545

Can You Top This?

SGW Enterprises has several custom stands available for Osborne owners. *Montop* is a specially-designed monitor stand, which locks on to the top of the Osborne 1 computer and holds any brand of monitor firmly in place. Made of quality, clear plexiglass, *Montop* reduces eye and neck strain by placing the monitor screen at an ergonomically safe angle for the viewer. Retail price is \$29.95.

Also available from SGW are matching Small and Large *Printer Stands*. The *Montop* Printer Stands are simple, sturdy, and convenient. They solve the problem of where to put the paper for your tabletop printer: underneath it. The small size supports 80-column printers such as the Epson MX-80 and the Okidata 82. The large size is reinforced for extra-strength to support bigger printers, such as the Epson MX-100 or the Okidata 83A. Price for the small stand is \$29.95, while the larger stand is \$5 more.

SGW Enterprises
PO Box 1015
Del Mar, CA 92014
714-755-8324

FREE CATALOG OF NEW SOFTWARE FOR OSBORNE 1*

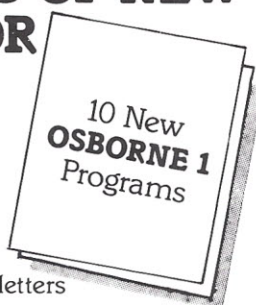
Describes easy-to-use software for business applications:

like our low-cost SPELL program that instantly converts your word processor into a spelling error locator. (No more embarrassing mistakes in letters and reports!)

Lists software designed for pure fun: like ELIZA—a robot "psychiatrist" that dispenses hilarious pseudo therapy. Great for parties.

Presents languages for advanced programmers: like C compiler, LISP, RATFOR, 8080 and Z80 macro assemblers.

Heath/Zenith and 8" CP/M* owners: catalog also lists 21 programs for your system.



Call or write for your free Software Toolworks catalog.

*OSBORNE 1 is a registered trademark of Osborne Computer Corp. CP/M is a registered trademark of Digital Research.

The Software Toolworks™



14478 Glorietta Drive,
Sherman Oaks, CA 91423
(213) 986-4885
Dealer inquiries invited.



Simulate Ups and Downs

Blue Chip Software has announced the release of what they think is a totally unique program for personal computers; *Millionaire*.

Millionaire brings the user into the world of Wall Street. Players manipulate as many as 15 different stocks with a dazzling array of transaction formats, including buying and selling stocks, put options, call options, buying on margin, borrowing against your net worth, and others.

Users who are familiar with the stock market will quickly recognize the accuracy that author Jim Zuber maintains throughout the game. In

fact, players can summon each of the 15 stocks' corporate histories as well as week-by-week industry trends and graphs.

Millionaire is available for the Osborne 1 at \$99.95.

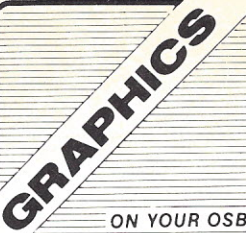
Blue Chip Software
18653 Ventura Blvd. #215
Tarzana, CA 91356

Denver Training Grounds

J. Gaudio Company of Denver, Colorado, has officially opened the doors on a new training program for newcomers to the Osborne 1. The "Osborne Independent Training" program consists of seven, half-day seminars on WordStar, CP/M, SuperCalc and MBASIC. Each seminar runs \$35.00, or \$200.00 for all seven. Class size is kept to a maximum of 20 and averages 10-15 participants, according to John Gaudio, program creator and chief lecturer.

The introductions to Osborne system software are split into two levels: one for the novice user who has just perused the *User's Guide*, and a second level concentrating on basic, hands-on experience with the computer. A third level will be initiated as soon as general user sophistication requires it says Gaudio. For questions and information, contact John Gaudio's Denver office at (303) 934-1407.

New Product information is derived from press releases sent to The Portable Companion by the producing companies. Statements of fact or opinions expressed in the New Product announcements that appear in this magazine are those of the producing company and have not been checked for accuracy by Osborne Computer Corporation. Before purchasing any of the products listed in this section, you are advised to check the validity of all claims made for the product.



GRAPHICS

ON YOUR OSBORNE 1™

GRAPHICS ON YOUR OSBORNE 1 IS AS EASY AS USING A PENCIL.

CREATE AN ENDLESS ARRAY OF DESIGNS, PICTURES, DRAWINGS AND GRAPHS FOR WORK OR JUST PLAIN FUN.

CREATE, SAVE, EDIT, REDISPLAY OR USE ANYTHING CREATED WITH GRAFIXWRITER IN YOUR OWN BASIC PROGRAMS.

GRAFIXWRITER WILL EVEN PRINT EXACT COPIES OF DISPLAYS THAT USE NON-GRAPHIC CHARACTERS ON ANY PRINTER.

GET YOUR FAMILY INVOLVED IN YOUR OSBORNE 1 WITH GRAFIXWRITER GRAPHICS!

\$29.95 CHECK, MONEY ORDER, OR C.O.D. FROM

ESC

ESCAPE ENGINEERING

2536 S. DIAMOND SANTA ANA, CA 92704

CALIFORNIA RESIDENTS ADD 6% TAX

A HIGH QUALITY, EASY TO USE PROGRAM DEVELOPED SPECIFICALLY FOR THE OSBORNE 1

SOFTWARE FOR THE OSBORNE™

PRO FOOTBALL POINT SPREAD SYSTEM \$55.00

Analyzes the most statistically meaningful data to handicap teams. Picked over 80% overall, over 70% point spread winners in 1980 and 1981; now available on Osborne. Includes schedule and standings printouts. Reuse each year by entering new schedule.

CASINO BLACKJACK \$25.00

Realistic simulation of casino play. Before play, you select options to duplicate the rules of any casino: number of decks, insurance wager, double down. Includes pair splitting. HI-OPT and 10-count totals show on demand.

California residents add 6% or 6½% sales tax. We pay shipping.

Order from:

MARATHON COMPUTER SYSTEMS, INC.

P.O. Box 1527
San Mateo, CA 94401
(415) 340-1756

BITS RECHARGEABLE BATTERY PACK AND U.P.S.

FOR THE OSBORNE™ COMPUTER

- 4 HOURS "STAND ALONE" POWER TO COMPUTER
- CONTINUOUS OPERATION AS U.P.S.
- LESS HEAT INSIDE COMPUTER
- RECHARGES AND OPERATES FROM VEHICLE
- POWER IS REGULATED, FUSED, AND SWITCHED
- 8 3/4 H x 9 1/8 L x 3 1/4" • 13 POUNDS

BITS BATTERY PACK: \$180.00
OPTIONAL U.P.S. 75.00 Each
SHIPPING 5.00 per order

Call (214) 361-4815 to order by phone.

BITS
6456 DANBURY
DALLAS, TX 75214

Condensed Print Worksheets

by Sue Winski

SuperCalc is indeed a super program, as all of you who have spent in a minimum of time with it will surely agree. Even with my programming background, I am still awed when I watch recalculations take place instantly. My only problem with SuperCalc, was the cutting and pasting required when my worksheet size exceeded the size of my 8½ inch wide paper when printing with the default standard 10 cpi (characters per inch) print size.

Recently I came up with a practical solution. My SuperCalc program is now modified so that it automatically prints in the smallest size print of my printer (my printer is the Okidata 82A). This smallest size is 16.5 cpi, which is considerably smaller than the 10 cpi standard. I do considerably less cutting and pasting now.

This change is easily effected using the INSTALLS program, which should be on the Supercalc diskette, provided by Osborne. The following describes how you do it. I have assumed that the CP/M system is on your SuperCalc diskette.

1. Place your SuperCalc disk in Drive A. (This is not your only copy of course. Somewhere you have one or two backup copies stashed away in case of disaster.) Press RETURN. Press RETURN again to start, then

/QY to get to CP/M. You should see the A > prompt on the screen.

2. Type INSTALLS, then press RETURN. The screen now says:

SuperCalc™ Install Program
Version 1.05

This program will let you modify
the SuperCalc™ file on your disk.
Do you wish to proceed (Y/N)?

3. Enter Y. The screen now says:

Enter the name of the SuperCalc file as: d:filename,
where "d" is the drive.
Enter name:

4. Type A:SC. Press RETURN. The screen now says:

GIVE A GIFT OF YEAR-ROUND COMPANIONSHIP THIS CHRISTMAS . . .

Make your Christmas shopping easy this year and send **The Portable Companion™** to your friends! Not only will you save 30% off the cover price, but your friends will receive a **FREE GIFT ISSUE**.

See insert card for details.



SuperCalc Install Program

- A. Edit Screen dimensions
- B. Edit Printer dimensions
- C. Edit Printer initialization string
- D. Save SuperCalc on disk
- E. Exit without changing SuperCalc

Enter option letter:

5. Enter C. The screen now says:

The printer initialization string is a series of up to 8 hex bytes that will be output to the printer prior to printing a worksheet:

- A. Current printer initialization string: xxx
- X. Exit to previous menu.

Enter option letter:

6. Enter A. The screen now says:

Enter new value

7. If you have an Okidata printer, enter **ID**, then RETURN. For the EPSON printer, enter **OF**, THEN RETURN. If you have any other printer, look in the owner's manual for a section called "control codes" or "function codes". Such a section describes the printer's features and the hexadecimal codes which are assigned to each feature. Press RETURN at the next "enter new value" request.

8. Enter **X** to leave the printer initialization string section. The screen appears as in section 4 above.

9. Enter **D**. This records the change on the SuperCalc diskette. The screen says:

This will install the changes you have made into your SuperCalc program.
Are all modifications complete (Y/N)?

10. Enter **Y**. The prompt **A** appears. Type **SC**, then press RETURN to test your installation.

Sue Winski is owner of SGW Enterprises and member of the San Diego Osborne Users' Group. 

Larger Screen for Osborne™

New Easy-View magnifying system is fully portable and stores inside the Osborne case without using any diskette storage space.

- Larger screen size eliminates eye strain and errors
- Finest optics of high-grade acrylic by world leader Bausch & Lomb
- Light weight and scratch resistant
- Fully adjustable, up, down, left, right
- Sturdy anodized aluminum bracket mounts instantly with "velcro" type fastener
- No flimsy wires to align or accidentally knock down
- Satisfaction guaranteed or your money back
- Full one year warranty and shipping cost included in price



If you have an Osborne, you need Easy-View.

Now only \$29.95

- ☐ VISA ☐ MasterCharge ☐ Check enclosed
☐ or send for free brochure

P.O. Box 20595, Portland, Oregon 97220 (503) 256-4244 ext. 4

DYNACOMP

Quality CP/M Software MBASIC and CBASIC

GAMES

BRIDGE MASTER

If you liked DYNACOMP'S BRIDGE 2.0, you will absolutely love BRIDGE MASTER. BRIDGE MASTER is a comprehensive bridge program designed to provide hours of challenging competition. Bidding features include the Blackwood convention, Stayman convention, pre-emptive openings, and recognition of demand bids and jump-shift responses. After playing a specific hand, you may replay the same hand, with the option of switching cards with your computer opponents. This feature allows you to compare your bidding and playing skills to BRIDGE MASTER. Bonuses for game contracts and slams are awarded as in duplicate bridge. Doubled contracts are scored based upon a computer assigned vulnerability. A score card is displayed at the conclusion of each hand. The score card displays a summary of total hands played, total points scored, number of contracts made and set, and % bids made. BRIDGE MASTER is clearly the best computer bridge program available. DYNACOMP'S previous BRIDGE 2.0 customers may upgrade to BRIDGE MASTER for a nominal charge of \$5.00 plus postage and handling (see ordering information box).

Price: \$21.95 Diskette

POKER PARTY

POKER PARTY is a draw poker simulation based on the book, POKER, by Oswald Jacoby. This is the most comprehensive version available for microcomputers. The party consists of yourself and six other (computer) players. Each of these players (you will get to know them) has a different personality in the form of a varying propensity to bluff or fold under pressure. Practice with POKER PARTY before going to that expensive game tonight! Apple cassette and diskette versions require a 32K (or larger) Apple II.

\$23.95 Diskette

MANAGEMENT SIMULATOR

This program is both an excellent teaching tool as well as a stimulating intellectual game. Based upon similar games played at graduate business schools, each player or team controls a company which manufactures three products. Each player attempts to outperform his competitors by setting selling prices, production volumes, marketing and design expenditures, etc. The most successful firm is the one with the highest stock price when the simulation ends.

\$29.95 Diskette

FLIGHT SIMULATOR

A realistic and extensive mathematical simulation of take-off, flight and landing. The program utilizes aerodynamic equations and the characteristics of a real aircraft. You can practice instrument approaches and navigation using radials and compass headings. The more advanced flyer can also perform loops, half-rolls and similar acrobatic maneuvers. Although this program does not employ graphics, it is exciting and very addictive. See the software review in COMPUTRONICS. Runs in 16K Atari.

\$23.95 Diskette

VALDEZ

VALDEZ is a computer simulation of super tanker navigation in the Prince William Sound; Valdez Narrows region of Alaska. Included in this simulation is a realistic and extensive 256 x 256 element map, portions of which may be viewed using the ship's alphanumeric radar display. The motion of the ship itself is accurately modeled mathematically. The simulation also contains a model for the tidal patterns in the region, as well as other traffic (outgoing tankers and drifting icebergs). Chart your course from the Gulf of Alaska to Valdez Harbor! See the software review in 80 Software Critique and Personal Computing.

\$21.95 Diskette

BACKGAMMON 2.0

This program tests your backgammon skills and will also improve your game. A human can compete against a computer or against another human. The computer can even play against itself. Either the human or the computer can double or generate dice rolls. Board positions can be created or saved for replay. BACKGAMMON 2.0 plays in accordance with the official rules of backgammon and is able to provide many fascinating sessions of backgammon play.

\$23.95 Diskette

SPACE EVACUATION!

Can you colonize the galaxy and evacuate the Earth before the sun explodes? Your computer becomes the ship's computer as you explore the universe to relocate millions of people. This simulation is particularly interesting as it combines many of the exciting elements of classic space games with the mystery challenge of ADVENTURE.

\$19.95 Diskette

MONARCH

MONARCH is a fascinating economic simulation requiring you to survive an 8-year term as your nation's leader. You determine the amount of acreage devoted to industrial and agricultural use, how much food to distribute to the populace and how much should be spent on pollution control. You will find that all decisions involve a compromise and that it is not easy to make everyone happy. Runs in 16K Atari.

\$18.95 Diskette

GO FISH

GO FISH is a classic children's card game. The opponent is a friendly computer with user inputs that are simple enough for small children to easily master. A must for children!

\$18.95 Diskette

STARBASE 3.2

This is the classic space simulation, but with several new features. For example, the Croylins now shoot at the Invincible without warning while also attacking starbases in other quadrants. The Croylins also attack with both light and heavy cruisers and move when shot at! The situation is hectic when the Invincible is besieged by three heavy cruisers and a starbase S.O.S. is received! The Croylins get even! See the software review in A.N.A.L.O.G. 80 Software Critique and Game Merchandising.

\$17.95 Diskette

GAMES PACK I

GAMES PACK I contains the classic computer games of BLACKJACK, LUNAR LANDER, CRAPS, HORSESHOE, SWITCH and more. These games have been combined into one large program for ease in loading. They are individually accessed by a convenient menu. This collection is worth the price just for the DYNACOMP version of BLACKJACK.

\$18.95 Diskette

GAMES PACK II

GAMES PACK II includes the games CRAZY EIGHTS, JOTTO, ACEY-DEUCEY, LIFE, WUMPUS and others. As with GAMES PACK I, all the games are loaded as one program and are called from a menu. You will particularly enjoy DYNACOMP's version of CRAZY EIGHTS.

\$18.95 Diskette

Why pay \$7.95 or more per program when you can buy a DYNACOMP collection for just \$19.95?

MOON PROBE

This is an extremely challenging "lunar lander" program. The user must drop from orbit to land at a predetermined target on the moon's surface. You control the thrust and orientation of your craft plus direct the rate of descent and approach angle. Runs in 16K Atari.

\$16.95 Diskette

CRANSTON MANOR ADVENTURE

CRANSTON MANOR ADVENTURE takes you into mysterious CRANSTON MANOR where you attempt to gather fabulous treasures. Lurking in the manor are wild animals and robots who will not give up the treasures without a fight. The number of rooms is greater and the associated descriptions are much more elaborate than the current popular series of Adventure programs, making this game the top in its class. Play can be stopped at any time and the status stored on diskette.

\$19.95 Diskette

TYPE 'N' TALK

DYNACOMP is now distributing the new and revolutionary TYPE-'N'-TALK™ (TNT) speech synthesizer from Voytex. Simply connect TNT to your keyboard and hear the words spoken. TNT is the easiest-to-program speech synthesizer on the market. It uses the least amount of memory and provides the most flexible vocabulary available anywhere!

TYPE-'N'-TALK List price \$375. DYNACOMP's price \$319.95 plus \$5.00 for shipping and handling.

MISCELLANEOUS

5 1/4" DISKETTES (soft sector/ten sectors)

\$39.95/20 Diskettes

As you might imagine, DYNACOMP purchases diskettes in large quantities and at wholesale prices. We want to pass the savings along to you!

BUSINESS and UTILITIES

PERSONAL FINANCE SYSTEM

\$39.95 Diskette

PFS is a single diskette, menu-oriented system composed of ten different programs. Besides recording your expenses and tax deductible items, PFS will sort and summarize expenses by payer, and display information on expenditures by any of 26 user defined codes by month or by payer. PFS will even produce monthly bar graphs of your expenses by category! This powerful package requires only one disk drive, minimal memory. You can record checks plus cash expenses so that you can finally see where your money goes and eliminate guesswork and tedious hand calculation. PFS has been demonstrated on network (CRS) TV!

TAX OPTIMIZER

\$59.95 Diskette

The TAX OPTIMIZER is an easy-to-use, menu oriented software package which provides a convenient means for analyzing various income tax strategies. The program is designed to provide a quick and easy data entry. Income tax is computed by all tax methods (regular, income averaging, maximum and alternate minimum tax). The user may immediately observe the effect of critical financial decisions. TAX OPTIMIZER has been thoroughly field tested in CPA offices and comes complete with the current tax tables in its data files. TAX OPTIMIZER is tax deductible!

DYNACOMP OFFERS THE FOLLOWING

- Widest variety
- Guaranteed quality
- Fastest delivery
- Friendly service
- Free catalog
- Toll free order phone

ABOUT DYNACOMP

DYNACOMP is a leading distributor of small system software with sales spanning the world (currently in excess of 50 countries). During the past three years, the DYNACOMP product line, but have maintained and improved our high level of quality and customer support. The achievement in quality is apparent from our many repeat customers and the software reviews in such publications as COMPUTRONICS, 80 Software Critique, A.N.A.L.O.G., Softalk, Creative Computing and Klobaud. DYNACOMP software has also been chosen for demonstration on network television. Our customer support is as close as your phone. It is always friendly. The staff is highly trained and always willing to discuss products or give advice.

EDUCATION

TEACHERS' AIDE

\$17.95 Diskette

TEACHERS' AIDE consists of three basic modules contained in one program. The first module provides addition and subtraction exercises of varying levels of difficulty. The second module consists of multiplication problems in which the student may be tested both on the final answer and/or on the subtotal answers in the long hand procedure. Several levels of complexity are provided here as well. The third module consists of division problems; one particularly nice feature of the division module is that the long hand division steps can be displayed along with the remainder in order to clearly demonstrate the procedure by which the remainder is derived. Using TEACHERS' AIDE is not merely a drill, but rather a learning experience.

STATISTICS and ENGINEERING

DIGITAL FILTER

\$43.95 Diskette

DIGITAL FILTER is a comprehensive data processing program which permits the user to design his own filter function or choose from a menu of filter forms. In the explicit design mode the shape of the frequency transfer function is specified by directly entering points along the desired filter curve. In the menu mode, ideal low pass, high pass and bandpass filters may be approximated to varying degrees according to the number of points used in the calculation. These filters may optionally also be smoothed with a Hanning function. In addition, multi-stage Butterworth filters may be selected. Features of DIGITAL FILTER include plotting of the data before and after filtering, as well as display of the chosen filter functions. Also included are convenient data storage, retrieval and editing procedures.

DATA SMOOTHER

\$23.95 Diskette

This special data smoothing program may be used to rapidly derive useful information from noisy business and engineering data which are equally spaced. The software features choice in degree and range of fit, as well as smoothed first and second derivative calculation. Also included is automatic plotting of the input data and smoothed results.

FOURIER ANALYZER

\$23.95 Diskette

Use this program to examine the frequency spectra of limited duration signals. The program features automatic scaling and plotting of the input data and results. Practical applications include the analysis of complicated patterns in such fields as electronics, communications and business.

TFA (Transfer Function Analyzer)

\$23.95 Diskette

This is a special software package which may be used to evaluate the transfer functions of systems such as hi-fi amplifiers and filters by examining their response to pulsed inputs. TFA is a major modification of FOURIER ANALYZER and contains an engineering-oriented decibel versus log-frequency plot as well as data editing features. Whereas FOURIER ANALYZER is designed for educational and scientific use, TFA is an engineering tool. Available for all computers.

HARMONIC ANALYZER

\$28.95 Diskette

HARMONIC ANALYZER was designed for the spectrum analysis of repetitive waveforms. Features include data file generation, editing and storage/retrieval as well as data and spectrum plotting. One particularly unique facility is that the input data need not be equally spaced or in order. The original data is sorted and a cubic spline interpolation is used to create the data file required by the FFT algorithm.

FOURIER ANALYZER, TFA and HARMONIC ANALYZER may be purchased together for a combined price of \$51.95 (three cassettes) and \$63.95 (three diskettes).

REGRESSION I

\$23.95 Diskette

REGRESSION I is a unique and exceptionally versatile one-dimensional least squares "polynomial" curve fitting program. Features include very high accuracy; an automatic degree determination option; an extensive internal library of fitting functions; data editing; automatic data, curve and residual plotting; a statistical analysis (t-test standard deviation, correlation coefficient, etc.) and much more. In addition, new fits may be tried without reentering the data. REGRESSION I is certainly the cornerstone program in any data analysis software library.

REGRESSION II

\$23.95 Diskette

PARAFIT is designed to handle those cases in which the parameters are imbedded (possibly nonlinearly) in the fitting function. The user simply inserts the functional form, including the parameters (A1), A2), etc.) as one or more BASIC statement lines. Data, results and residuals may be manipulated and plotted as with REGRESSION I. Use REGRESSION I for polynomial fitting, and PARAFIT for those complicated functions.

MULTILINEAR REGRESSION (MLR)

\$28.95 Diskette

MLR is a professional software package for analyzing data sets containing two or more linearly independent variables. Besides performing the basic regression calculation, this program also provides easy to use data entry, storage, retrieval and editing functions. In addition, the user may interrogate the solution by supplying values for the independent variables. The number of variables and data size is limited only by the available memory.

REGRESSION I, II and MULTILINEAR REGRESSION may be purchased together for \$51.95 (three cassettes) or \$63.95 (three diskettes).

ANOVA

\$43.95 Diskette

In the past the ANOVA (analysis of variance) procedure has been limited to the large mainframe computers. Now DYNACOMP has brought the power of this tool to small systems. For those conversant with ANOVA, the DYNACOMP software package includes the 1-way, 2-way and N-way procedures. Also provided are the Yates χ^2 factorial designs. For those unfamiliar with ANOVA, do not worry. The accompanying documentation was written in a tutorial fashion (by a professor in the subject) and serves as an excellent introduction to the subject. Accompanying ANOVA is a support program for building the data base. Included are several convenient features including data editing, deleting and appending.

BASIC SCIENTIFIC SUBROUTINES, Volumes 1 and 2

DYNACOMP is the exclusive distributor for the software keyed to the popular texts BASIC SCIENTIFIC SUBROUTINES, Volumes 1 and 2 by F. Runkel. These subroutines have been assembled according to chapter. Included with each collection is a menu program which selects and demonstrates each subroutine.

Volume 1

Collection #1: Chapters 2 and 3—Data and function plotting; complex variables and functions.
Collection #2: Chapter 4—Extended matrix and vector operations.
Collection #3: Chapters 5 and 6—Random number generators (Poisson, Gaussian, etc.); series approximations.
Price per collection: \$20.95 Diskette.

All three collections are available for \$33.95 (three diskettes).

Volume 2

Collection #1: Chapter 1—Linear, polynomial, multidimensional, parametric least squares.
Collection #2: Chapter 2—Series approximation techniques (economization, inversion, reversion, shifting, etc.).
Collection #3: Chapter 3—Functional approximations by iteration and recursion.
Collection #4: Chapter 4—CORDIC approximations to trigonometric, hyperbolic, exponential and logarithmic functions.

Collection #5: Chapter 5—Table interpolation, differentiation and integration (Newton, LaGrange, splines).

Collection #6: Chapter 6—Methods for finding the real roots of functions.

Collection #7: Chapter 7—Methods for finding the complex roots of functions.

Collection #8: Chapter 8—Optimization by steepest descent.

Price per collection: \$18.95 Diskette.

All eight collections are available for \$129.95 (eight diskettes). Because the texts are a vital part of the documentation, BASIC SCIENTIFIC SUBROUTINES, Volumes 1 and 2 are available from DYNACOMP.

BASIC SCIENTIFIC SUBROUTINES, Vol. 1 (319 pages): \$19.95 + 75¢ postage

BASIC SCIENTIFIC SUBROUTINES, Vol. 2 (790 pages): \$23.95 + \$1.50 postage

See reviews in KILOBAUD and Dr. Dobbs.

ORDERING INFORMATION

All orders are processed and shipped within 48 hours. Please enclose payment with order and include the appropriate computer information. If paying by VISA or MasterCard, include all numbers on card. Purchase orders accepted.

Shipping and Handling Charge

Within North America: Add \$2.00
Outside North America: Add 15% (Air Mail)

Quantity Discounts

Deduct 10% when ordering 3 or more programs; 20% when ordering 5 or more. Dealer discount schedules available upon request.

Ask for DYNACOMP programs at your local software dealer. Write for detailed descriptions of these and other programs from DYNACOMP.

DYNACOMP, Inc. Dept. O

1427 Monroe Avenue

Rochester, New York 14618

24 hour message and order phone: (716) 442-8731

Toll free order phones: (800) 828-6772

(800) 828-6773

Office phone (9AM-5PM EST): (716) 442-8960

New York State residents please add 7% NY sales tax.



CalcAids™

CalcAids™

CalcAids™

CalcAids™

CalcAids™

CalcAids™

CalcAids™

CalcAids™

Trademark of Osborne Computer Corporation

Linear Regression in SuperCalc

by William Roberts

Editor's note: Before you skip this article because you're not interested in statistical calculations, think again. Roberts presents a step-by-step explanation of how he put together his worksheet, and this description is filled with valuable advice. If you've ever wondered about automatic tabbing during data entry, using columns or "sets" of data, and so on, you'll find helpful information in this CalcAid.

Linear regression is a statistical technique used to show the relationship between two variables. For example, in Table 1, we have the relationship between the number of tape drives at a computer site and the time a serviceman spends repairing the site (this example is taken from *Applied Statistics* by John Neter, William Wasserman, and G.A. Whitmore. In addition, all the formula used were derived from this source.)

We might suspect that there is a relationship between the number of drives and the length of a service call. If we know the number of drives that require service at a site, we might be able to estimate how long the service man will require to complete the job, and therefore provide better service. There is a method to do this and it is easily implemented with SuperCalc.

Linear Regression programs are

available in many pocket calculators. But these all have one big shortcoming. Once you have entered the data, you can not go back and check its accuracy. But with the SuperCalc worksheet presented here, you have a listing of the original data, plus most of the computations you need.

The worksheet I have defined allows only 100 observations. Of course, that number can always be increased. But the worksheet is a memory hog and only 9K of memory is available once it is complete. If you need more observations, you must modify the program. But watch the

Observation	Minutes at Site	Number of Drives
1	197	4
2	272	6
3	100	2
4	228	5
5	327	7
6	279	6
7	148	3
8	377	8
9	238	5
10	142	3
11	66	1
12	239	5

Table 1—Service time for tape drives

i	Yi	Xi
1	27.69	1
2	15.24	5
3	17.68	4
4	8.85	7
5	13.47	5
6	18.45	4
7	27.43	1
8	11.49	6
9	2.86	9
10	7.34	7

Table 2—Another Test Data Set

memory use; a blank worksheet also takes up 20K of disk space. Remember that when you try to save data.

Building a worksheet

The first step is to build a SuperCalc worksheet. Listing 1 contains a series of SuperCalc commands to build your linear regression worksheet. The following paragraphs explain what each step is for and why it is done.

In the listing, < CR > means the Return Key. Control D (>D) may be replaced with the right arrow key. The down arrow may be used in place of control X (>X).

If you are not interested in theory, skip this next section and go on to the "Instructions for Use" section.

1) /GM

This instruction turns OFF the auto calculation. This is a good idea, as, when the worksheet is completed, it will take about 15 seconds to calculate all the values. You definitely don't want to spend this extra time building the worksheet. And you probably won't want to wait when entering data. When you wish to calculate the answers, use the "!" key.

2) "Linear Regression < CR >

A title is placed at the start of the worksheet. I have assumed that you will save the worksheet. The title tells you what this sheet is for when you ask to see the SuperCalc files with a load or save.

3) = A2

Now position the cursor to start writing the headings.

4) "i < CR > "Yi < CR > "Xi < CR >

Put in the headings for the first three columns.

5) "Yi > 2 < CR > "Xi ^ 2 < CR > "Yi * Xi < CR > /FEA2:F2,TR - CR >

And for the next three. The headings are right justified to make the sheet look nice.

6) = A3 < CR > 1 < CR >

This column gives the index number for each of the data points. This entry gives the first number.

7) " < CR >

This is a quote, a blank, and a carriage return. Put a blank under the independent variable (Yi). This is done because later on, we will use the tab spacing. If this column were blank, we would space past it.

8) /RB3,B4:B102 < CR >

Put blanks in all the entries in the column.

9) /CB3:B102,C3 < CR >

Put blanks in the dependent variable column.

10) = D3 < CR >

Position the cursor to the column D. Now we start to use SuperCalc's

OUTLET PROTECTION for the OSBORNE™

COMPUTER PROBLEM RESOLVER #10™

POP™ Powerline Outlet Protector for 120 volt 15 amp circuit, where a low cost quality plug-in device is required.

- Low Cost, High Quality Computer Protection
- Quick, Simple, Easy Installation
- Laboratory Tested For Effectiveness
- Full One Year Warranty

TE Electronics Copiague, N.Y. 11726

ORDERS & DEALER INQUIRIES MAY BE PLACED WITH THESE AUTHORIZED DISTRIBUTORS:

WEST COAST:

Ault Associates
(415) 367-1710
I/C Systems
(503) 639-0334
Horizon Engineering Sales Co.
(214) 226-4712/(713) 772-9427
Nelson Electric Supply Co.
(214) 741-6341

MIDWEST:

I/O Company
(312) 593-0644
Midtec Associates
(913) 441-6565
El Pak Co., Inc.
(612) 535-2671
Famous Telephone Supply
(216) 762-8811

Neptune, Inc.
(216) 247-7030
Horizon Engineering Sales
(918) 252-7222

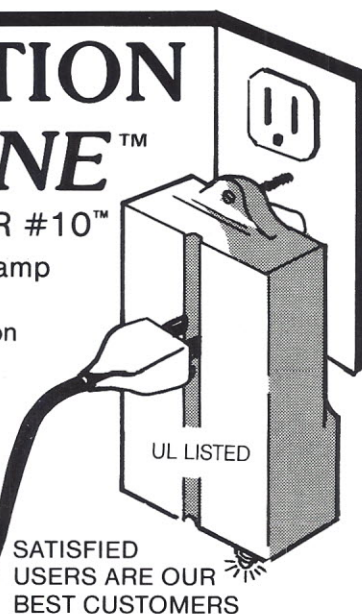
EAST COAST:
Victor Electronics Corp.
(617) 481-4010
New England Alarm Co.
(617) 862-6560

Disc Sales
(609) 768-2534
Clifford of Vermont
(802) 234-9921

SOUTH:
T.V. Products & Assoc.
(305) 859-2291
A-C Lightning Security, Inc.
(800) 821-5575
Noramco, Inc. (919) 876-6262

Continental Supply of America, Inc.
(404) 447-9777
Data Communications System
(703) 241-7803
Burco Distributors
(304) 453-6387/6388

CANADA
EIC Electrical Industries
(514) 336-9750/6642



calculation abilities.

11) B3*B3<CR>

This column calculates the square of the dependent variable. This form is chosen over B3 2 because the calculation will go faster using only multiplication. The time difference is 11 seconds versus 22 or about 50 percent.

12) C3*C3<CR>

Calculate the square of the independent variable.

13) B3*C3<CR>

Calculate the variables' product.

14) =A4<CR>A3+1<CR>

Go to the second line of the data entry section. Calculate the number of the second entry (I bet it is 2).

15) /RA4,A5:A102<CR>

Now get the number for the next 98 entries. They all show up as 2, because we have manual calculation on.

16)

/RD3,D4:D102<CR>/RE3,E4:E102<CR>/RF3,F4:F102<CR>

Put the calculations from steps 11

through 13 in the entire columns.

17) =A103<CR>'<CR>

Position the cursor at the bottom of the data entry section. Put a line across the sheet to signify totals.

18) =B104<CR>

Move the cursor to start the sums of the columns.

19) SUM(B2:B103)<CR>

Get the sum of the independent variables.

20) /RB104,C104:F104<CR>

Get the sums of all the columns.

21) =A105<CR>"N<CR>COUNT(B3:B102)<CR>

Get the number of observations. This is used many times in later calculations, so we put the value here for future reference.

22) =A106<CR>"Mean<CR>AVERAGE(B3:B102)<CR>/RB106,<CR>

Get the mean of the independent and dependent variables. SuperCalc very nicely provides a single function to find this value.

23) =A107<CR>"Std dev<CR>

Put up the label for the standard deviation.

24) SQRT(D104-B104*B104/B105)/B105-1)<CR>

Now get the standard deviation of the independent variable.

25) /RB107,C107,AYYYNN

The same formula can be used for the dependent variable. We must use the Ask for Adjust because we are using the number of variables stored at B105. We do not want this value adjusted.


26) =D108<CR>^X

Position the cursor and press the down arrow. We will now fill in some values by column rather than row.

27) "SSTO=<CR>"SSR=<CR>"SSE=<CR>"r=<CR>=E109<CR>

Set up labels for the SSTO (Sum Square of the Totals), SSR (Sum Square of the Residuals), SSE (Sum Square of the Errors), and the correlation coefficient (r). Move the cursor to where the SSTO formula will be placed.

WIZARD of OsZ™

a division of  Contact Enterprises

New Releases in Stock
and Immediately Available

Write for free data sheet
on any item listed



'Software and Accessories for Osborne™ Computers is our *only* business'

PLINK & RCPMLINK — now on one disk.

Transmit complete file to bulletin board in seconds with user friendly PLINK. Saves files to buffer and writes to drive A or B. RCPMLINK enables fast, accurate block transfer of files between remote CP/M systems (or other Osborne 1 Computers).....List \$50.00

OSBOARD 1 — for graphics.

Create bar graphs, data entry forms, game layouts, logos, etc. and save to disk. Routines to convert OSBOARD 1 output files to formats compatible with BASIC, CBASIC or Assembly language. Can be used to print hard copy on many dot matrix printers. Much more.....List \$50.00

WIZDEX — generates index for Wordstar.

Generate an alphabetically sorted index for a text file. WIZDEX sorts words and phrases and attaches them to end of file. Can be updated when file is edited.....List \$50.00

GAMES DISK 4 — Graphics at play.

2DMAZE, 3DMAZE, BOUNCE and LANDER (by Mirashanta). Programmed in CBASIC. Games are in two levels, simple then advanced. All include extensive graphics.....List \$50.00

GAME DISK 1, GAME DISK 2, GAME DISK 3.

GD1: Othello, Castle, Wahoo. GD2: Chess, Oracle, Startrek. GD3: Bomber, Lunar, Maze, Backgammon. Simple to operate; beginner to expert.....List \$50.00 each

NEW PRODUCT

SIGNALMAN MARK V MODEM

At last! A small, light, compact direct connect modem for Osborne 1. Just plug it in and communicate through any modular telephone. Complete with cables and 9-pin Osborne wired connector. Uses 9v internal battery; 9v dc adapter is available.....List \$129.00

**Write or Call WIZARD OF OsZ™ Your Source for Osborne Software
Dealer Inquiries Invited**

P.O. Box 964

Chatsworth, California 91311

Telephone: (213) 341-9399

28) /FED109:D112,TR<CR>

Right justify the labels so they will look nice.

29) D104-B104*B104/B105<CR>

Calculate the SSTO.

30) B110*B110*(E104-C104*C104/B105)<CR>

Then calculate the SSR.

31) E109-E110<CR>

And the SSE.

32) B110/ABS(B110)*SQRT(E110/E109)

The correlation coefficient must have the sign of the linear regression equation. That is the purpose of the B110/Abs(B110) in the formula.

33)

= A110<CR>"A1 = <CR>"A0 = <CR>"X Intercept <CR>

Position the cursor and put in some more labels.

34) /FEA110:A111,TR<CR>

Right justify the first two labels. The last one is not changed.

35)

= B110<CR>(F104-B104*C104/B105)/(E104-C104*C104/B105)<CR>

Calculate the coefficient of the independent variable in the regression equation.

36) B106-B110*C106<CR>

Calculate the constant value in the equation.

37) = C112<CR>-B111/B110<CR>

Solve the equation for zero.

38)

= A114<CR>"Estimates<CR>"X = <CR>"Y = <CR>

Label the section of the worksheet where you will be able to do estimates.

39) /FEA115:A116,TR<CR>

Right justify the labels.

40) = B115<CR>"* <CR>

Put an asterisk to mark the location to enter the independent variable.

41) B111 + B110*B115<CR>

Calculate the dependent variable.

42) = A110<CR>/WH = A105<CR>

Move the cursor, and divide the worksheet into two windows. The results section will always be visible while entering data.

43) D = B115<CR>

Set the cursor to space to the right, then position it to calculate an estimated dependent variable. When the data is entered and all values calculated, an independent variable may be entered. Then use the semicolon to go to the upper window.

44)

= A1<CR> = A2<CR>/TB = B3<CR>

Position the upper window and set the titles.

45) /PAL:F104<CR>/UB3:C102<CR>

Protect most of the upper window section. Unprotect the data entry section.

46) /GT!

Set the cursor to tab mode. This causes the cursor to move its position to the proper location for entry of the data. This is why we placed a blank in each position of columns B and C. The exclamation point causes the index numbers to be calculated.

The screen should look like Figure 1. All the errors in the results (lower) window are from the divisions by zero. (We have a lot of divisions by call B105, which contains zero.) Don't worry about these error messages yet. You should now save the worksheet.

	A	B	C	D	E
1:	Linear Regression				
2:		X	Y	X^2	Y^2
3:	1	1	1	1	1
4:	2	4	2	16	4
5:	3	9	3	81	9
6:	4	16	4	64	16
7:	5	25	5	100	25
8:	Mean				
9:	Mean	ERROR	ERROR		
10:	Std dev				
11:	Std dev	ERROR	ERROR		
12:	Error				
13:	Error	ERROR	ERROR		
14:	SSTO=ERROR				
15:	SSTO=ERROR				
16:	SSR=ERROR				
17:	SSR=ERROR				
18:	SSE=ERROR				
19:	SSE=ERROR				
20:	R=ERROR				
21:	R=ERROR				
22:	Estimates				
23:	Estimates	X=	Y=		
24:	X=	Y=			
25:	Y=				
26:					
27:	Width: 9 Memory: 9 Last Col/Row: F116 ? for HEL				

Figure 1

Instructions for Use

When the program is re-loaded, the cursor is positioned to input the first dependent variable (Y₁). When the dependent variable is entered, the cursor moves to a position to accept the first independent variable (X₁). After the dependent variable is entered, the cursor moves to the next line. This happens because the tab mode is set in step 46. Continue entering data like this until all the entries are complete.

To test the program, enter the data from Table One. The dependent variables are the minutes required to make a service call. The dependent variable is entered first. Then the independent variable—the number of drives—is entered. The cursor goes to the next line, and the next row is entered. After you have entered the last value, enter "!" to calculate the results. Your screen should look like Figure 2.

Figure 2

	A	B	C	D	E
1:	Linear Regression				
2:		X	Y	X^2	Y^2
3:	1	1	1	1	1
4:	2	4	2	16	4
5:	3	9	3	81	9
6:	4	16	4	64	16
7:	5	25	5	100	25
8:	Mean				
9:	Mean	217.75	4.583333		
10:	Std dev				
11:	Std dev	91.89136	2.865224		
12:	Error				
13:	Error	ERROR	ERROR		
14:	SSTO= 92894.25				
15:	SSTO= 92894.25				
16:	SSR= 92547.37				
17:	SSR= 92547.37				
18:	SSE= 336.8819				
19:	SSE= 336.8819				
20:	R= .9981849				
21:	R= .9981849				
22:	Estimates				
23:	Estimates	X=	Y=		
24:	X=	Y=			
25:	Y=				
26:					
27:	Width: 9 Memory: 9 Last Col/Row: F116 ? for HEL				



	A	B	C	D	E
11: Linear Regression					
21:	1	Yi	Xi	Yi^2	Xi^2
11:	9	2.86	9	8.1796	81
12:	10	7.34	7	53.8756	49
13:	11		0	0	0
14:	12		0	0	0
15:	13		0	0	0
105: N	10				
106: Mean	15.05	4.9			
107: Std dev	8.110547	2.558211			
108:					
109:			SSTO= 593.1972		
110:	A1= -3.16214		SSR= 588.9484		
111:	A0= 30.54448		SSE= 4.248770		
112: X Intercept	9.659436		r= -.956412		
113:					
114: Estimates					
115:	X=				
116:	Y= 30.54448				
117: Text=					
118:					
119:					
120:					
121:					
122:					
123:					
124:					
125:					
126:					
127:					
128:					
129:					
130:					
131:					
132:					
133:					
134:					
135:					
136:					
137:					
138:					
139:					
140:					
141:					
142:					
143:					
144:					
145:					
146:					
147:					
148:					
149:					
150:					
151:					
152:					
153:					
154:					
155:					
156:					
157:					
158:					
159:					
160:					
161:					
162:					
163:					
164:					
165:					
166:					
167:					
168:					
169:					
170:					
171:					
172:					
173:					
174:					
175:					
176:					
177:					
178:					
179:					
180:					
181:					
182:					
183:					
184:					
185:					
186:					
187:					
188:					
189:					
190:					
191:					
192:					
193:					
194:					
195:					
196:					
197:					
198:					
199:					
200:					
201:					
202:					
203:					
204:					
205:					
206:					
207:					
208:					
209:					
210:					
211:					
212:					
213:					
214:					
215:					
216:					
217:					
218:					
219:					
220:					
221:					
222:					
223:					
224:					
225:					
226:					
227:					
228:					
229:					
230:					
231:					
232:					
233:					
234:					
235:					
236:					
237:					
238:					
239:					
240:					
241:					
242:					
243:					
244:					
245:					
246:					
247:					
248:					
249:					
250:					
251:					
252:					
253:					
254:					
255:					
256:					
257:					
258:					
259:					
260:					
261:					
262:					
263:					
264:					
265:					
266:					
267:					
268:					
269:					
270:					
271:					
272:					
273:					
274:					
275:					
276:					
277:					
278:					
279:					
280:					
281:					
282:					
283:					
284:					
285:					
286:					
287:					
288:					
289:					
290:					
291:					
292:					
293:					
294:					
295:					
296:					
297:					
298:					
299:					
300:					
301:					
302:					
303:					
304:					
305:					
306:					
307:					
308:					
309:					
310:					
311:					
312:					
313:					
314:					
315:					
316:					
317:					
318:					
319:					
320:					
321:					
322:					
323:					
324:					
325:					
326:					
327:					
328:					
329:					
330:					
331:					
332:					
333:					
334:					
335:					
336:					
337:					
338:					
339:					
340:					
341:					
342:					
343:					
344:					
345:					
346:					
347:					
348:					
349:					
350:					
351:					
352:					
353:					
354:					
355:					
356:					
357:					
358:					
359:					
360:					
361:					
362:					
363:					
364:					
365:					
366:					
367:					
368:					
369:					
370:					
371:					
372:					
373:					
374:					
375:					
376:					
377:					
378:					
379:					
380:					
381:					
382:					
383:					
384:					
385:					
386:					
387:					
388:					
389:					
390:					
391:					
392:					
393:					
394:					
395:					
396:					
397:					
398:					
399:					
400:					
401:					
402:					
403:					
404:					
405:					
406:					
407:					
408:					
409:					
410:					
411:					
412:					
413:					
414:					
415:					
416:					
417:					
418:					
419:					
420:					
421:					
422:					
423:					
424:					
425:					
426:					
427:					
428:					
429:					
430:					
431:					
432:					
433:					
434:					
435:					
436:					
437:					
438:					
439:					
440:					
441:					
442:					
443:					
444:					
445:					
446:					
447:					
448:					
449:					
450:					
451:					
45					

Letters

Pretty Print... a Character Enhancement Program.

Balderdash!!! Our **PRETTY PRINT™** program does a lot more than the author gave us credit for in his article entitled 'WordStar with EPSON' in the 'Portable Companion' June/July issue.

First of all, we support an Osborne Specific Printer Busy Test, so a user can simultaneously edit a document while printing another document.

Secondly, we have added extended special effects commands to WordStar, so the user can use all combinations of print mode of the EPSON MX-80 FT PRINTER with GRAPHTRAX.

Thirdly, we offer Osborne specific copies of **Pretty Print™** not only for the EPSON MX-80 with GRAPHTRAX+, but for the OKIDATA, MPI, NEC, and C.ITOH Dot Matrix Printers.

Finally, **Pretty Print™** comes with two more simple, but very useful CP/M Printer related programs called **LineWriter™** and **Set'n'Pretty™**. **LineWriter™** transforms your CP/M based personal computer and printer into a memory typewriter for generating quick memos and letters without the bother of super-sophisticated CP/M based wordprocessing (i.e. WordStar) packages. **Set'n'Pretty™** is another CP/M based solution that gives the user of the CP/M based personal computer and Dot Matrix Printer (i.e. EPSON, OKIDATA, C.Itoh, MPI, or NEC) the ability to select the printing mode while in the CP/M command line. So if the user wants to printout listing using compressed text, all a user would have to do is execute the **Set'n'Pretty™** program and select compressed mode.

These are our current prices: (Our prices are subject to change quarterly).

PRETTY PRINT (PP) with Manual \$49.95
SET'n'PRETTY (SP) with Manual \$49.95
LINEWRITER (LW) with Manual \$29.95

(PP) + (SP) = \$85.00
 (PP) + (LW) = \$69.95
 (SP) + (LW) = \$69.95
 (PP) + (SP) + (LW) = \$99.95

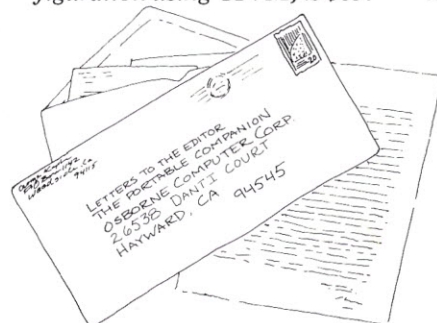
Figure 1

continued from page 11

The enclosed rebuttal was developed with the use of WordStar, Pretty Print, and an Epson MX-80 printer with Graphtrax.

Ron L. Jones
 founder
 Hurricane Labs

The printout in Figure 1 shows the rebuttal we received, replete with special effects. Basically, three points are raised: first, an Osborne-specific printer busy test is included to make simultaneous editing and printing of documents more responsive; second, all the features of an EPSON printer with Graphtrax are supported; last, the current price of **Pretty Print** is \$49.95— **Pretty Print**, with an additional utility to install the printer configuration using CP/M, is \$85. —th

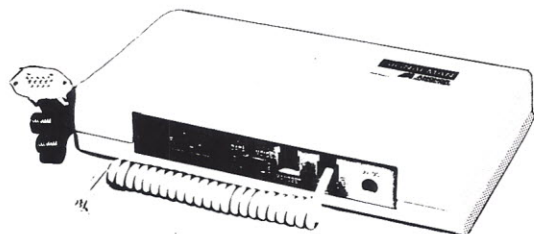


COMPUTER CANNERY

P.O. BOX 23425 • SAN JOSE, CA 95153 • (408)/226-3184

Finally —

A MODEM for the OSBORNE™
 — MODEM PORT —



MARK V by Anchor Automation is designed for the OCC-1 Modem Port. This is a Direct Connect, 300 Baud Modem. Runs on a 9V battery \$129.95

COMMUNICATIONS SOFTWARE FOR THE OSBORNE
 PLINK, RCPMLINK by **WIZARD of Oz™**

Both programs on disc — ready to run \$50.00



TO ORDER: Send check or money order to:

(Please add 3% shipping/handling charges — California residents add appropriate sales taxes)

COMPUTER CANNERY — P. O. Box 23425 • San Jose, CA 95153 • (408) 226-3184

Puzzler

Another problem from the Puzzler

Four passengers are in a plane—the President of the United States, the world's smartest man, a priest and a hippie. Suddenly the plane catches fire. But, alas, there're only three parachutes. The President grabs one of them and before jumping out of the plane explains: "I owe it to the American people to survive and serve out my term."

Right behind him jumps the world's smartest man, who declares himself "an irreplaceable asset of humanity." The priest stares at the hippie, swallows a few times, and says: "my son, I'm in God's hand now—I want you to have the last parachute." To which the hippie responds: "Hey, man, that's cool, and wow—really religious. But hey, there's no problem; there's a parachute for each of us. The world's smartest man just jumped out of the plane with my knapsack."

We relate this bit of humor in focusing in on society's rapidly growing disenchantment with the so-called brilliant "specialist" or "professional"—not only in supply-demand factors, but in changing public attitudes. Sometimes a problem looks so simple, but here's an actual example of a situation that happened to "the Puzzler".

On a recent commercial flight, my airplane flew from San Francisco to New York at maximum speed. Normally, flying at maximum speed, I would arrive in New York in four-fifths of the time it would take to fly there at cruising speed. On the day that I made my trip, however, the velocity of a favorable wind enabled me to get to New York in half the time it would normally have taken at maximum speed. On the return journey, the airplane departed from New York at 1 p.m. considering the facts supplied and ignoring the various time zones, and encountering the same velocity and direction of the wind, at what time did my flight arrive back at the San Francisco international airport?

Send your answers to: Jim Tunnell
Puzzler Thinkerupper
Osborne Computer Corp.
26538 Danti Court
Hayward, CA 94545

Note: We still have not received any correct answers to either of the last two puzzles. We'll print the answers to all 3 in the next issue. Remember, there are still prizes riding on the first two puzzles.

Whoops
Whoops
Whoops
Whoops
Whoops
Whoops
Whoops
Whoops
Whoops
Whoops

Osborne Software Update Policy

Users of Osborne software will soon have available to them one of the best software update services in the industry.

For the five diskettes that accompany the machine (CP/M System, CP/M Utility, WordStar, SuperCalc, and MBASIC/CBASIC) an update package that consists of the following new versions will be made available:

WordStar/MailMerge 3.0
SuperCalc 1.12
CBASIC 2.08

The other software that accompanies the Osborne machine remains unchanged. Price for the update package, including new documentation, is \$75, and the package is available through any authorized Osborne dealer.

Besides fixing some minor problems with the software, the update package also adds a number of new features to WordStar and SuperCalc. WordStar, for instance, now features 52-column help messages, has faster scrolling, and incorporates column moves. SuperCalc 1.12 adds a new command, execute, that allows you to execute a series of commands from a text file. The upgrade package will be made available through dealers as long as there is continuing demand for it.

Starting in January of 1983, updates for bundled software will only

be made available through an update service. The idea behind the service is simple: you pay a yearly fee of \$75, and anytime the software is updated Osborne automatically sends you a copy of the new software. Order forms for the service will appear in the next issue of *The Portable Companion* and will be made available through dealers. A fuller description of the update service will also appear in the next issue. Subscribers to the update service will be assumed to ALREADY HAVE WordStar 3.0, SuperCalc 1.12 and CBASIC 2.08—in other words, these revisions will not be part of the update service, we assume that everyone has the current set of software as of January 1983.

Approved Software

Osborne software that is purchased separately—the Osborne Approved Software programs—will be updated in a different fashion. Our policies for this software are as follows:

- Packages that sell for under \$75 will not be updated.
- Packages that sell for \$75-\$200 will be updated for \$25. You will have to send us your original diskette, and we will return it or another diskette along with a brief description of the changes that were made.
- Packages that sell for over \$200

will be updated for \$50. You send us your diskette and we will send a completely new package—new documentation, new diskette, new aids (if supplied), new binder or folder, and so on.

- For a few packages, at present only Peachtree Accounting (to be made available when double density is introduced) the update fee will have to be slightly higher due to the massive documentation and the number of diskettes in the package.

All packages that are produced after November 1st will include a full description of the Osborne Approved Software update policies.

Updates for Approved Software packages are made available to users when a new version goes into production. Announcements of the new versions will ONLY be made through this column in *The Portable Companion* and through our dealers, we will not send out notices directly to users. To do so would force us to raise the cost of the updates, and we wish to make them as reasonably prices as is possible.

It is anticipated that the first revisions will be announced in the next issue of this magazine. We'll present full details of what is available and how to order it in the next issue, but we thought that you'd want to know as soon as possible what our update policies and procedures are going to be, thus this announcement.

We feel that our update policies are among the best in the industry, if not *the* best. MicroPro charges \$75 for the update from WordStar 2.26 to 3.0. Some companies do not even make new versions available at low cost to previous purchasers. No company that we know of offers to completely replace an expensive software package for only \$50. We want everyone to have the current version of our products, and are therefore offering them to you at our cost of producing them.

Now, there are a few caveats that

you should know about. First, updates will only be made available to *registered users* of our software. If we do not have a signed, completely filled out registration card or software license agreement from you for a product you want to update, you will be sent a new registration card or agreement to fill out and will not send your update until we've received the card or agreement back. We have no choice in this matter—in order for us not to violate the terms of our contracts with the software producers, we cannot update someone who is not registered with us, as they are not officially an owner of the software.

Second, if a new product is not covered by our original contract with a firm, as in the case where there are so many changes that the originating firm considers it to be a new product, we cannot update that product under the program just outlined, as we will have to pay additional royalty costs. An example of this is CP/M 3.0, which Digital Research touts as a new product; our contract with them covers CP/M version 2 and the updates to it. For the most part, however, the contracts we've signed should cover subsequent revisions.

Third, if there is substantial abuse of our update policies—as in users updating their packages and selling off the older one to a friend—we may have to change our policy. We feel obligated to bring you the best update service in the industry; if you abuse that service, then we can only conclude that you aren't really interested in software updates at all, and will have to change our policies to reflect that attitude.

So, if you're interested in getting your software updated, you should pay a visit to your dealer and inquire about the bundled software update, or you should continue to read this column in this magazine to find out about when other updates become available and how to order them.

Advertiser's Index

ADI	66
Apogee Designs Ltd.	16
Blue Chip Software	35
BL&W	31
Bottom Line	32,33
Burnes Industrial Tech.	83
Business Master	38
CI Software	77
Computer Cannery	92
Computer Workshop	13
Comsol	24
Contact Enterprises	89
Cornerstone	70
Creative Computer Prod.	76
Data Access	14
Data Source	68
Data Terminals & Communications	78
Desert Computer Prod.	27
Digital Marketing	5
Dipco	62
Discotech	29
Discount Software	19
Dynacomp Inc.	86
800 Software	21,23,25
Escape Engineering	83
Escon	69
FOG	80
FYI	IBC
J. Gaudio	22
Integrated System	74
Intelligent Statement	9,37
JMM Enterprises	BC
Leading Edge	IFC
Herbert Lewis	74
Marathon Compt. Systems	83
Media Mix	39
Micro Art Programmer	70
Microcomp. New Orleans	66
Micro House	61
Orthocode	63
Ozzyware	63
Osborne Computer	6
Osborne/McGraw Hill	91
Osborne Featured Soft.	65
Osborne Software	81
Osborne	40
Portable Companion	64
Portable Software	39
Relational Systems	73
Robbat & Assoc.	85
Robonics	12
Rocky Mountain Data	63
Rocky Mt. Software System	67
SGW Enterprises	75
Smith Corona	36
The Software Store	70
Software Toolworks	82
Software Training	2
Sorcim	71
Strobe	1
Sudden Products	69
Swan	28
Taurus Software	67
TII	88
TNW Corporation	18
Trantor Systems	34
West MI Connection	11
Wholesale Suppliers	77

Sources

Other magazines about computers exist besides *The Portable Companion*, and we thought you'd like to know about the ones that are of most interest to Osborne 1 owners. In alphabetical order, we have:

Byte
70 Main Street
Peterborough, NH 03458
12 issues for \$19

a little bit of everything, although
it tends to be a bit
"computer sciency"

Creative Computing
PO Box 789-M
Morristown, NJ 07960
12 issues for \$24.97

heavily oriented towards
software

Interface Age
16704 Marquardt Ave.
Cerritos, CA 90701
12 issues for \$21

CP/M and business are primary
thrusters

Lifelines
1651 Third Ave.
New York, NY 10028
12 issues for \$24

CP/M software of all types

Microcomputing
80 Pine Street
Peterborough, NH 03458
12 issues for \$25

Computer hobbyist magazine

Microsystems
Box 1192
Mountainside, NJ 07092
12 issues for \$24.97

for S-100 and Cp/M computer
owners

Personal Computing
50 Essex Street
Rochelle Park, NJ 07662
12 issues for \$18

business and beginning users are
target readers

Popular Computing
70 Main Street
Peterborough, NH 03458
12 issues for \$15

new computer owners are their
target

All of the above magazines carry articles with relevance to the Osborne 1 owner. Further information about each can be obtained by writing the publishers at the addresses given.



Information Filing Just Took a Superstep Into The Future — SuperfileTM

Superfile And Your OsborneTM Will Increase Your Productivity.

SuperfileTM is an easy to learn, easy to use system that lets you file, cross index, and retrieve text entries. No programming needed. No retyping of your present entries.

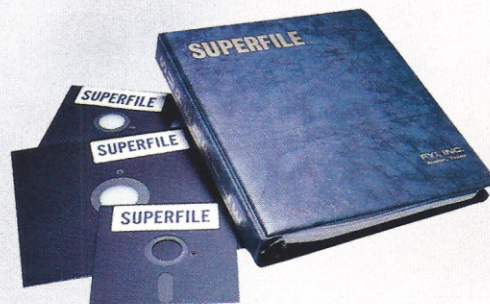
Superfile can organize your:

- customer and client information
- sales leads
- correspondence
- library and journal abstracts
- personnel records
- mailing lists
- card files
- **And much, much more!**

Only \$195 (including manual with many examples, and DEMO data base). Try **Superfile** at our risk for 30 days. If **Superfile** doesn't do the job you want it to, return it for a full refund. Call toll free to order your copy of **Superfile** today.

Superfile trademark of FYI, Inc.

OSBORNE[®] Trademark of Osborne Computer Corporation



SUPERFILE

1-800-531-5033 MC/VISA
(512) 346-0133 in Texas

or write:
FYI, INC.

**P.O. Box 10998 #615
Austin, Texas 78766**

Please add \$10 outside of the U.S., Canada, and Mexico.

JMM Computer Peripheral Accessories for Osborne[®]

These RS232C Serial Cables are especially designed to interface the Osborne computer system to the various serial devices used in the computer industry.

The Centronics printer cable allows the use of the IEEE-488 port as a centronics conformal interface for printers. This cable is 5' long and avoids the need for a serial to parallel interface in the printer.

The IEEE-488 adaptor cable provides the standard IEEE-488 interface connection to the Osborne 1 computer.

JMM Enterprises manufactures and distributes quality interface products for the Osborne. We provide Monitors, Printers, and STROBE[™] Plotters. An EXMON adapter is also available for your HP-85.

The EXMON external monitor adapter is designed for the Osborne computer system, and enables the use of any standard video monitor with the Osborne 1 computer.

The KEYBOARD EXTENDER cable is intended to increase the freedom of movement for the keyboard of the Osborne 1. This cable plugs into the Osborne 1's keyboard connector and then the keyboard cable plugs into the other end. The standard length is 24".

A coaxial type video cable is required for the high data rates transmitted by the Osborne. This quality cable enhances the display.

The EXMON II is a combination package and includes the EXMON and a UHF modulator. This allows the use of television sets as monitors without "hard wire" connections to the television set.

Padded carrying case to protect and ease handling and carrying.



JMM
enterprises, inc.

115 Battersby Street
Enumclaw, Washington 98022
(A Seattle suburb)
U.S.A.

(206) 825-1637

These products are in stock at local dealers. You may contact JMM directly for assistance. Overseas shipments are no problem.